

The Leeds Teaching Hospitals NHS Trust Research and Innovation Conference

15 May 2024

Conference Abstracts

Title: Immune Boost: Improving access to early maternal breast milk (MBM) for infants <34 weeks

Authors: Gemma Miller, Victoria Tricklebank, Emily Shaw

Background: Research highlights that early access to MBM improves neonatal outcomes for preterm babies in terms of morbidity and mortality.

Methods: The method included joint and stand-alone maternity and neonatal initiatives. Creation of a multidisciplinary team (MDT) with an allocated lead neonatal nurse, specialist preterm midwives, neonologist and obstetrician. Missed cases of MBM administration reviewed to highlight opportunities for learning. Increased education across neonatal and midwifery teams regarding the importance of early expressing and administration of MBM to all babies. Introduction of colostrum packs in all relevant areas which includes audio-visual and written information on the benefits of early MBM and essential equipment. Buccal colostrum added to neonatal prescribing protocol to embed in practice and encourage its prompt administration. Promotion of the QI project through logo, posters and stickers across NNU and midwifery areas to motivate and educate across the MDT. Improved time-critical education provided by the preterm specialist midwives regarding the benefits of MBM.

Results: Fifteen months into the project, 100% of babies received MBM within 24 hours of birth, with 91% and 21% within 6 and 2 hours respectively.

Conclusions/Implications for Practice: The success of the Immune Boost project is directly attributable to the effective collaborative MDT approach which employed multiple initiatives across the maternity and neonatal settings.

Title: Proficiency based progression training: transferring a novel approach to training for labour epidural analgesia in a tertiary referral centre

Authors: Hassan Ahmed, Elahmedawy H., Mohyeldin M., Timperley S., Hussey T., Howell S.

Background: Lumbar epidural analgesia remains the golden standard for pain relief in labour. Despite the importance and the widespread use of lumbar epidurals, the epidural failure rate was reported to be as high as 23%. Proficiency based Progression (PbP) training based on unambiguously defined metrics appears to improve performance in various technical and nontechnical skills. Our group has developed and implemented PbP training for labour epidural catheter placement for novices and demonstrated 53% reduction in epidural failure rate. The aim of the current study is to examine for the feasibility to transfer similar PbP training for labour epidural catheter placement to tertiary teaching hospital.

Methods: All trainees in anaesthesiology scheduled to commence training in obstetric anaesthesia at SJUH during 2023 and 2024 will be invited to participate. Trainees will be trained using the pre-validated metrics on 1:1 basis with one of the experts. Each trainee will be allowed to perform a start to finish procedure on a manikin without interruption and this will be marked with an independent expert. Only trainees who can demonstrate the predefined proficiency benchmark, would pass to the clinical phase. All subsequent attempts of epidural placement will be followed up by an independent investigator.

Results: This study is still recruiting. We have successfully trained three novices who have performed 17 epidurals to date. The epidural failure rate was 11.7% (2/17). and there was difficulty to place epidural catheter due to patient factors in 17.6% of cases (3/17). Supervisor was present in 82% of cases. However, the proportion of senior takeover was 11.7% (2/17).

Conclusions/Implications for Practice: We acknowledge that these results are preliminary, and it is early to draw up a conclusion. However, it coincides with the previous studies which were done by our group (almost 50% reduction in epidural failure rate). The ultimate goal of our study is to test for the feasibility of transferring PbP.

Title: Microbiology Resistance: A focus on Meropenem usage in Saint James's University Teaching Hospital and Leeds General Infirmary.

Authors: Adekunle Ademokun

Background: Meropenem, is an antibiotic which is part of the carbapenem group that is used in treatment of severe infections [1]. For some clinicians it is a common choice of empirical antibiotic treatment. The measurement of its success stems from a longer duration to maintain a higher level above the minimum inhibitory concentration [1]. Meanwhile, microbial resistance can arise from prolonged excessive use and cause failure in treatment [2].

Methods: Stratified randomization of patients who were prescribed Meropenem as in patients in 2 Hospitals in West Yorkshire from February 2023 to July 2023.

Results: The highest usage of Meropenem was in February 2023 at 312, with the lowest in April 2023 at 144. The indicator with the highest number of meropenem prescription was chest infection while the least number was endocarditis. From February 2023 to July 2023, 53% had involvement of the microbiologist or trust guidelines before commencement of the antibiotic

Conclusions/Implications for Practice: Factors influencing the choice of Meropenem are sepsis, poor response to first line antibiotics and allergy to penicillin. Prolonged usage of the antibiotic increases risk of resistance, and foreseeable challenge will arise when due to resistance it becomes unsuitable to treat sepsis. Review by a Microbiologist and usage of guidelines improves rationalization and narrowing of the spectrum of antibiotic choice [3]. Microbiologists should be involved before a patient is prescribed meropenem with clinical review to assess for antibiotic stepdown.

Title: Evaluating the impact of a giant cell arteritis ultrasound workshop, using Kirkpatrick's model.

Authors: Kate Smith Ubhi H., Sarker B., Mackie S.L., Wakefield R.J.

Background: Giant cell arteritis (GCA) is diagnosed using ultrasound as the first-line imaging technique 1,2. However, the uptake of ultrasound has been slow for several reasons, including lack of training. To address this and disseminate best practice we organized a GCA course in Leeds. The impact of the GCA course on delegates' satisfaction and its influence on the improvement of their local GCA pathways was assessed using Kirkpatrick's model 3.

Methods: Levels 1 and 2 of the Kirkpatrick model were assessed using anonymous delegate evaluations filled in at the end of each day. Informal email feedback was sought from the patient volunteers. Kirkpatrick levels 3 and 4 were evaluated using an online questionnaire sent to delegates nine months after the course.

Results: The course was attended by 18 delegates, including rheumatologists (44.4%), sonographers (33.3%), rheumatology registrars (16.7%), and radiologists (5.6%). All respondents evaluated the course as useful or extremely useful. Open-ended questions revealed several themes, including hoping to start a GCA pathway, improving a GCA pathway, involving the wider MDT, and changing confidence. Level 3-4 questions showed that 42.9% of respondents had initiated a GCA pathway, while others had implemented strategies to improve their existing pathway. Increased connections were made with the wider MDT. Delegates indicated improved confidence, especially in ultrasound equipment settings.

Conclusions/Implications for Practice: The GCA course was effective in improving delegates' knowledge and confidence. The course helped the delegates to initiate or improve their local GCA pathways, involving the multidisciplinary team.

References

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Title: A New Reality(DTx) for Neurorehab?- A Feasibility Study of Augmented Reality in Parkinson's Disease Rehabilitation

Authors: Caroline Gill, O'Connor R., Sunil A.

Background: Parkinson's disease is a neurodegenerative disorder that causes severe movement and balance problems and is a frequent cause of falls [1]. The number of people living with Parkinson's globally is expected to double in the next two decades. People with Parkinson's are encouraged to exercise regularly to maintain their mobility and balance. Maintaining an exercise programme can become more difficult over time, leading to reduced function and declining quality of life. In addition, people may experience 'freezing of gait' (FoG). One of the most effective treatments for FoG is sensory cueing [2]. However, for this treatment to be effective it needs to be delivered in sufficient doses, which can be challenging. Our aim is to demonstrate that the augmented reality rehabilitation can be deployed at home to people living with Parkinson's.

Methods: We aim to recruit 30 adult participants with Parkinson's into this feasibility study. Recruitment has commenced and will run for 6 months. Each participant will carry out an individually prescribed physiotherapy programme at home using an augmented reality headset. Participation will be for 6 weeks, with remote monitoring [3]. The primary outcome measure is the Timed-Up-and-Go. Secondary outcome measures include the Parkinson's Disease Questionnaire-39, EQ-5D-5L, and the Lindop Parkinson's Assessment Scale. Statistical analysis comprises parametric and non-parametric methods appropriate to the data. This study has institutional review board approval (IRAS Project Identification Number: 321744) and is registered on ClinicalTrials.gov (NCT05794542).

Results: We aim to publish the results of this trial of home-based augmented reality rehabilitation in Parkinson's in Autumn 2024.

Conclusions/Implications for Practice: New game-based exercises, using sensory cues, played through augmented reality glasses will be used to deliver walking and balance rehabilitation for people with Parkinson's, in their homes. Our project's vision is to provide creative and accessible therapies broadening horizons and opportunities in rehabilitation science and healthcare technologies more widely.

References

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FINALIST

Title: Assessing the effects of personalised airway clearance techniques in children with Primary Ciliary Dyskinesia, a mixed method study employing 129Xe ventilation MRI.

Authors:

Lynne Schofield, Smith, L., Biancardi, A., Marshall, H., Hughes, D., Shanks, S., Shawcross, A., Robson E., Moya E., West, N., Singh, S., Hind, D., Wild, J.

Background: Personalised airway clearance techniques (ACTs) are recommended in Primary Ciliary Dyskinesia (PCD), yet their effects are unknown. 129Xe ventilation MRI (129Xe-MRI) is a highly sensitive lung imaging method that images the distribution of ventilation within the lungs which has potential to inform clinical decision making.

Methods: "Clinically stable individuals were imaged with 129Xe-MRI immediately pre, post and 4-hours post ACT regimen. From 129Xe-MRI, the ventilation defect percentage (VDP) and ventilation heterogeneity index (VHI) quantified the proportion of the unventilated lung, and the degree of ventilation heterogeneity in ventilated regions respectively. Data expressed as mean \pm SD or median, range.

Subsequently, "think-aloud" methods were used to capture physiotherapists' clinical decision making while reviewing clinical data, and novel MRI findings. Transcripts were coded to an ACT personalisation model.

Results: 27 children with PCD (15 male, age 6-17, FEV1 z-score -1.5 ± 1.6) were imaged. No significant change in VDP or VHI was seen from pre-ACT to immediately post-ACT or 4-hours post-ACT (pre-ACT VDP 6.3, 0.1-26.8% VHI 11.45, 7.0-12.8, post-ACT VDP 5.4, 0.2-26.6% VHI 8.3, 6.8-15.9, 4-hours post-ACT VDP 6.1, 0.1-26.0% VHI 8.6, 6.6-17.7). However, for most cases, visible changes in the distribution of ventilation were evident immediately and at 4-hours post-ACT. Changes were heterogeneous and included defect resolution, improvement, persistence, and new defects. MRI data aligned with or challenged case clinical pictures and influenced decision making, providing information on lung health, treatment response, experiential learning. In most cases, proposed ACT regimen changes were informed or affirmed by MRI data. In some cases, clinicians were uncertain what to propose and planned further assessment.

Conclusions/Implications for Practice: Using 129Xe-MRI, changes in ventilation were seen following a personalised ACT in children with PCD. Although there was no group change in VDP or VHI, the heterogeneous effect of ACT on ventilation abnormalities can be clinically informative. 129Xe-MRI does inform personalisation of ACT regimens.

FINALIST

Title:

A review of therapy treatment for extensor repairs zone 5-7 following change of protocol

Authors: Helen Neal, Caroline Pellatt

Background: An injury to the tendon/s on the back of the hand affects the patient's ability to straighten their finger/s. They predominantly affect males in their thirties in the dominant hand and are estimated to cost the UK over £100 million/year in cost of care, loss of wages and productivity. Zone 5-7 injuries are surgically repaired and managed by therapists with a splint and exercise regimen. The therapy service previously used a forearm-based splint to protect the repair and patients were unable to use their hand in function for up to 6 weeks.

Methods: A literature search was completed to review the evidence for the treatment of repaired extensor tendon injuries. A benchmarking exercise to compare treatment protocols was completed with other regional hand units in the UK.

A relative motion extension splinting (RMES) protocol was introduced in February 2023. Outcomes from this new service were evaluated and compared to the previous regimen to measure the impact on patient care and service delivery.

Results: Patients treated with the new regimen had no rupture of the repair and there was no difference in range of movement or strength outcomes at discharge compared to the old regimen. Patients were able to return to function and work earlier with the new protocol.

A reduced number of therapy sessions and earlier discharge date were identified. There was also an estimated saving in material cost of £6.88 per patient which equates to approximately £400/annum.

Conclusions/Implications for Practice: The introduction of the RMES protocol for the management of repaired extensor tendon injuries has had a positive impact on the service and the patient, with earlier return to work, earlier discharge dates and cost savings, in keeping with the literature and benchmarking. The therapy team are now routinely treating patients with the RMES protocol.

Title: Should oncology clinic letters be routinely dictated in front of patients?

Authors: Lorna Mayo, Twelves, C. Gelcich S.

Background: Patients with conditions other than cancer value clinicians dictating clinic letters in front of them (face-to-face; F2F). Patients with cancer have, however, been excluded from these studies. This study addresses this question in patients with cancer and oncologists.

Methods: Sixty-three patients with metastatic breast cancer who had experienced F2F dictation completed a questionnaire about the practice; 61 responded. Sixty-nine oncology consultants within Leeds Cancer Centre were invited to complete an online survey on the advantages and disadvantages of F2F dictation; 33 responded. Semi-structured interviews were conducted with 11 patients and 5 clinicians to explore views further. Interviews were transcribed and analysed thematically.

Results: Almost all patient responders (93%) found F2F dictation helpful and 2/3rd preferred F2F dictation; reasons included it providing a summary, giving an opportunity to ask questions and to correct errors. The remaining 1/3rd had no preference; only 4% of patients would prefer not to have F2F dictation. Of eleven patients who were interviewed; 10 said they find the letters helpful and 9 that they would like all doctors to dictate F2F.

No clinicians who responded to the survey currently dictate F2F; the majority (84%) would not consider doing so but 12% said they may in specific situations. Potential advantages clinicians identified included opportunities for patients to ask questions and correct errors. These were, however, outweighed by perceived disadvantages, the most common being that it would take more time (70%) and that patients would not want F2F dictation (30%). Five oncologists were interviewed; the key concerns identified were additional time required for F2F dictation and that it may change the role of the letter, undermining communication with the GP.

Conclusions/Implications for Practice: There appears to be a disparity between patients' positive views of F2F dictation and clinicians' reluctance to consider it which warrants further evaluation of whether the identified benefits outweigh the disadvantages.

Title: Patient satisfaction and experience of having a dedicated CF Diabetes Specialist Nurse within a regional adult CF service: Results from an online survey

Authors: Benjamin Oliver Yusuf, Shimmin, D., Spoletini, G. giulia., Etherington, C., Clifton, I., Peckham, DG.

Background: Cystic fibrosis diabetes (CFD) is a common complication of CF with prevalence increasing with age. In CF, poor glycaemic control is associated with reduced lung function and weight, increased frequency of pulmonary exacerbations (Prentice et al, 2023). Microvascular disease and other complications of CFD are likely to further increase as result of the improved survival associated with the introduction of CFTR modulator therapy. A CF Diabetes Specialist Nurse (DSN) was appointed in May 2023 to develop the service and help further improve clinical stability and diabetic outcomes. Objective: To evaluate the patient experience of having a dedicated DSN within the CF multidisciplinary team.

Methods: An online anonymous survey was sent to people with CFD who had undergone a review by the DSN. Questions focussed on demographics, diabetes duration, quality of care, communication, knowledge and expertise, goal setting, self-management, access to technology, support and usefulness of a DSN. There was a free text option for further comments.

Results: 45/108 (42%) surveys were returned. 98% rated knowledge and expertise of the DSN as very good to excellent. 89% rated joint management planning and goal setting as very good to excellent. 93% felt their feelings and concerns were addressed. The majority felt the DSN helped to support their diabetes self-management. 65% felt the DSN had improved their access to diabetes technology. 98% of patients felt supported by the DSN. All patients felt it was useful to have a DSN in the CF team. Comments included CF DSN was a 'real asset to the team'.

Conclusions/Implications for Practice: Patient reported outcomes showed an overwhelmingly positive response to having a DSN within the CF MDT. Quality of care, knowledge and expertise, communication, goal setting, self-management, access to diabetes technology were outcomes patients highly rated. Future work exploring the impact of this new post on clinical and metabolic outcomes is ongoing.

Title: Patient satisfaction and experience of an intensive bowel cleansing regimen for colonoscopy in a regional adult CF service: Results from an online survey

Authors: Deirdre Shimmin, Spoletini, G., Yusuf, B., Etherington, C., Clifton, I., Peckham DG.

Background: Risk of early colorectal cancer (CRC) is higher in people with CF (pwCF) hence patient engagement with colonoscopy screening is important (Matson, et al 2019) Standard bowel preparation is often inadequate in pwCF and an intensive bowel cleansing regimen is advised to optimise polyp detection. In January 2021, an intensive bowel cleansing regimen was devised and adopted by the multidisciplinary team as an integral part of clinical care. This included six days low residue diet to coincide with four days of low volume polyethylene glycol (PEG) then two days high volume PEG and stimulant laxative. Objectives: To assess patient experience of the new bowel cleansing regimen.

Methods: An online anonymous survey was sent to all patients who had undergone colonoscopy in last three years. Questions included demographics, transplant status, modulator therapy, clarity of the information, acceptability of the intensive low residue diet and laxatives and free text questions.

Results: 47/72 (65%) surveys were returned (51% male), 37 (79%) were prescribed CFTR modulators, 22 (47%) had CF diabetes and 9 (19%) had undergone solid organ transplant. Patients rated the information on, and rationale for colonoscopy as excellent (49%) or good to very good (49%). Satisfaction with written information on diet and laxative regimen was reported as good to excellent in 92%. 53% of patients found the low residue diet, easy or very easy to follow, none found it very difficult. Adjusting diabetes medications advice was not reported as causing major concern. Only six (13%) reported difficulty in taking the prescribed laxatives. 96% completed the full prescription with only 4% being unlikely or extremely unlikely to repeat the protocol. Altering the taste of the laxatives was commonly suggested by patients to improve their overall experience.

Conclusions/Implications for Practice: Overall, patient engagement with CRC screening and their experience and satisfaction with the intensive bowel cleansing regimen was good.

Title: Community MRI requests in the management of Knee problems – is practice changing?

Authors: Angela Reilly, Dadswell, S., Urquhart, S., wood, M.

Background: Knee MRI is a diagnostic test commonly requested by Musculoskeletal Advanced Physiotherapy Practitioner's working within Leeds Community Healthcare Trust. MRI is an expensive and scarce diagnostic modality but can provide crucial information in some cases for planning pathways of care that span organisational boundaries. Post pandemic backlogs have

increased MRI waiting times. It is therefore important that all MRI resources are used judiciously and that requests are clinically appropriate and aid patient management pathways.

Methods: In 2018/2019, MRI request forms and clinic letters were retrieved for all 83 patients referred for Knee MRI and independently analysed by two experienced LCH MSK APP's (AR & SF). In the absence of a gold standard benchmark to measure appropriateness, Knee MRI requests were judged to be appropriate or not based on the likelihood that imaging findings would impact clinical management. Recommendations made following this evaluation were implemented. These included the formation of a weekly cross trust Knee MDT meeting involving Leeds Community Healthcare Trust Musculoskeletal Advanced Physiotherapy Practitioners and Leeds Teaching Hospitals Trust Orthopaedic and Radiology Colleagues. Re-evaluation took place in 2022/23 analysing data from 103 patients using the same process conducted by four experienced MSK APP's (AR, MW, SD, SU).

Results: The rate of Knee MRI scan requests deemed appropriate increased from 54% in 2018/2019 to 83% in 2022/2023.

Conclusions/Implications for Practice: The implementation of a joint multiprofessional cross site Leeds Teaching Hospitals and Leeds Community Healthcare Trust Knee MDT has resulted in improved rates of appropriate knee MRI requests amongst Leeds Community Healthcare Musculoskeletal Advanced Physiotherapy Practitioners. Musculoskeletal Advanced Physiotherapy Practitioner's may benefit from access to shared multidisciplinary learning involving clinical expertise across organisational boundaries resulting in improvements in Knee MRI referrals.

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Title: The Campaign to Help Improve Respiratory Prescribing (CHIRP) Audit and Feedback programme

Authors: Stella Johnson, Imran M., Thomas O., Foy R., Alderson S.L., Carder P., Doran G.

Background: The Campaign to Help Improve Respiratory Prescribing (CHIRP) is an audit and feedback programme starting in 2023 to improve quality of care for asthma.

Methods: Audit and feedback is based on the idea that "healthcare professionals are prompted to modify their practice when given performance feedback showing that their clinical practice is inconsistent with a desirable target" [Ivers et al, 2012]. West Yorkshire Integrated Care Board (ICB) works with University of Leeds researchers using routinely collected data to develop individual practice-level prescribing reports which are sent to all GP practices across West Yorkshire every eight weeks. The reports show the practice's prescribing in comparison with other practices in the same area, using aggregated anonymous data extracted from the patient record system. The reports show a series of 8 indicators, developed in collaboration with local clinicians and medicines optimisation colleagues. These look at poor asthma prescribing practice, and where improvements can be made to bring prescribing in line with NICE guidance on greener prescribing. The reports also include research evidence and best practice guidelines to support practices to optimise prescribing and improve patient care.

Results: The programme is still ongoing but already shows improvements, for example: Good asthma control is indicated when patients are prescribed fewer than 3 SABA inhalers per year, and more than 12 SABA inhalers prescribed per year indicates that urgent review is required. During the first 6 months of the project, we have seen decreases in these indicators:
Number of patients prescribed 6 or more SABAs a year reduced by 1217 (4%)
Number of patients prescribed 12 or more SABAs a year reduced by (8%)

Conclusions/Implications for Practice:

The reports highlight potential suboptimal prescribing in line with guidance and following evidence and give evidence-based methods for changing prescribing. The programme is showing an improvement in the quality of care provided to patients.

Reference

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Title: The changing landscape of enteral tube feeding in Cystic Fibrosis (CF) in the highly effective modulator therapy (HEFT) era.

Authors: Dee Shimmin, May, L., Peckham, D.

Background: Enteral feeding in CF is widely used in clinical practice (Shimmin et al, 2019). In recent years, the introduction of highly effective modulator therapy (HEMT) is associated with significant improvements in pulmonary function and nutritional status (Calverly et al 2022). As a result, the number of individuals requiring tube feeding has fallen and gastrostomy tubes (G-tubes) are being proactively removed. We present our experience of gastrostomy tube (G-tube) removal from a large cohort of over 400 adults with CF.

Methods: Patients were identified using electronic patient records (EMIS web). Data extracted for age, weight, BMI, FEV1%, diabetes and transplant status, tube feeding, HEMT and gastrostomy site complications following G-tube removal.

Results: 33 adults with CF and G-tubes were identified in 2019 when HEMT was introduced. 18 adults (12 male) who underwent tube removal were included in the analysis. Median age [range] 28 [20-39] years, 1 post liver transplant, 1 post lung transplant (NOT prescribed HEMT) and 7 with CF-diabetes. At tube removal, median weight [range] 65 [45.1-82.3]kg, BMI 22.6 [18.5-27.8]kg/m² and Fev1% 46% [27-88]. Median time between tube insertion and removal: 95 [20-253] months. Median duration between start of HEMT and tube removal was 15 [3-36] months, following a significant improvement in pulmonary function and nutritional parameters.

In 5 cases (27%), tube removal resulted in significant leakage, requiring nursing management with resolution in 2/5 after 3 weeks. 3 cases developed a gastrocutaneous fistula (GCF), 1/5 required surgical intervention whilst 2/5 underwent endoscopic suturing - successful in 1 case but unsuccessful in the other (despite 2nd attempt endoscopic suturing) who awaits surgical closure.

Conclusions/Implications for Practice: In our single-centre experience, tube feeding is becoming uncommon in people with CF on HEMT. Tube removal in most cases is uneventful, however persistent GCF may occur requiring surgical and endoscopic intervention. We have now developed a Standing Operative Procedure for future management.

Title: A data-driven approach to determining optimal fibroscan interval in MASLD

Authors: Callum Wood, Rowe, I., Parker, R.

Background: Metabolic Dysfunction Associated Steatotic Liver Disease (MASLD) is increasing in prevalence. There are no licensed drug therapies; the mainstay of treatment is lifestyle modification. We assessed progression of fibrosis for MASLD patients in our service.

Methods: We accessed elastography data from departmental FibroScan machines, encompassing results from December 2017 to November 2023. Incomplete data was completed from patient records. Data was analysed using R.

Results: 21 925 scans were extracted (13 635 individuals). 3434 patients had MASLD; of whom 937 underwent follow-up. The median time between exams was 507 days (Interquartile range, IQR 364-815). Mean age was 58.8 years (SD 13.8). The median LSM was 8.8kPa (IQR 6.2-12.9) and (where available) 324 dB/m (IQR 283-360) for CAP. The median change in LSM was -0.1 kPa (IQR

-2.7 to +1.8), at a rate of -0.06 kPa/year; the change in CAP was 0 dB/m (IQR +/- 27). Of 411 patients with baseline fibroscan suggestive of moderate fibrosis (LSM >10kPa), 49 (11.9%) had an increase in LSM of $\geq 20\%$. Conversely, 113 patients (27.5%) had a decrease $\geq 20\%$. The median follow-up interval was 489d (IQR 344-794). 526 patients had baseline LSM <10kPa. Of these, 81 (15.4%) had a subsequent fibroscan showing LSM >10kPa, suggesting developing fibrosis. The median follow-up period for was 587d. 70% of increases in LSM were identified within 18 months of index scan.

Conclusions/Implications for Practice: In this dataset of 937 patients, there was no overall change in LSM. However, there was evidence of progression to clinically significant fibrosis in approximately 1 in 7 patients starting with LSM <10kPa. This progression contrasts with a larger proportion of patients with elevated LSM at baseline apparently improving. Longitudinal changes in LSM can guide intervals for repeat testing but there is a need to define the magnitude of change that demands modifications to management.

Title: Implementing multifactorial falls prevention practices in hospital: a realist evaluation

Authors: Natasha Alvarado, McVey, L., Healey, F., Gardner, P., Hardiker, N., Zaman, H., Dowding, D., Wright, J., Woodcock, D., Lynch, A., Randell, R.

Background: Despite prevention efforts, falls in hospital remain a common and ongoing safety concern, with potentially serious consequences for patients. The National Institute for Health and Care Excellence recommend a multifactorial falls risk assessment (MFRA), with personalised, multidomain interventions to modify individual falls risk factors, and makes a 'do not use' recommendation for falls risk stratification tools, but there is variation in how these practices are implemented.

Methods: A realist review of the literature was conducted to construct theories concerning how, why and in what contexts MFRAs and personalised interventions are implemented successfully. The theories were tested in a multi-site case study in three NHS Acute Trusts, in orthopaedic and older person wards. After obtaining ethical approval, data were gathered through ethnographic observations (251.5 hours), interviews with healthcare professionals (n=50), patients and carers (n=31), and a review of patient clinical records (n=60).

Results: Four theories were prioritised related to falls leadership, task facilitation, multidisciplinary team responsibility, and patient participation in interventions. Across sites, nurses led delivery of MFRAs and prevention planning. Electronic tools facilitated and documented these processes. However, items included in MFRA tools varied across sites and competing priorities on nurse time could reduce tool use to a tick box exercise. Although falls prevention was understood as a multidisciplinary problem, nurses and healthcare assistants had primary responsibility, because they delivered enhanced patient supervision for patients stratified as at high risk of falling. Patient participation and personalisation of care was influenced by the quality of the interaction between staff and patients.

Conclusions/Implications for Practice: Nurses are ideally placed to lead falls prevention practices, but personalised, multidomain interventions require multidisciplinary and patient/carer involvement. Future research should investigate the extent to which current systems, in particular use of enhanced patient supervision, both modify falls risk factors and manage their effects, using multidisciplinary and personalised approaches.

FINALIST

Title: Supporting person-centred care for people with dementia in hospital settings. Co-design, implementation and evaluation of the CONNECT Enhanced Care Intervention in three hospitals across England.

Authors: Nicky Taylor, Handley, M., Theodosopoulou, D., Hadley, R., Surr, C., Goodman, C., Harwood, R., Phillips, R.

Background: Constant Observation is a care practice commonly used in hospitals to manage the safety of specific patients, including some people with dementia. Guidelines for the use of Constant Observation with people living with dementia are lacking, however, as with other care practices, a person-centred approach is considered best practice. This can be difficult for staff providing Constant Observation in hospital settings to achieve. New approaches are needed, and co-design is a valuable means of eliciting important insights to inform effective interventions that reflect and address challenges in practice.

Methods: 29 co-designers (hospital staff, people with dementia and their supporters) were recruited from three study sites to create a person-centred intervention to support Constant Observation, during ten co-design meetings. The resulting four-component intervention – CONNECT Enhanced Care – was tested for feasibility and acceptability in three hospital sites. Staff implementation champions were recruited in each ward to support use of the intervention. Feasibility and acceptability were assessed using a case study design, comprising observations, interviews, and standardised surveys and evaluated under the constructs of Normalisation Process Theory (Murray et al, 2010).

Results: Findings from twelve weeks of implementation (February 2023- May 2023) on six wards (four care of older people wards, one admissions ward, and one orthopaedic ward) across three hospitals indicate that staff were most able to use intervention components which focused on key care work, felt familiar and aligned with goals for care.

Conclusions/Implications for Practice: Co-designing new interventions for implementation can create carefully considered resources and meaningful understanding between hospital staff and people affected by dementia. Implementation and embedding of innovative care practices for patients with complex needs can be affected by system challenges.

Title: Improving cultural competency among physiotherapists caring for patients from diverse cultural and ethnic minority backgrounds.

Authors: Manish Gohil, Millington,P.

Background: Increasing diversity of the United Kingdom population and the disparities in the health status of people from diverse cultural and ethnic backgrounds places critical importance on healthcare providers, including physiotherapists, to provide culturally competent care. Evidence from existing literature supports the idea that by establishing cultural competency in healthcare, clinical staff can improve the quality of patient care; specifically, it can improve treatment adherence and reduce health disparities. Therefore, the aim of this quality improvement project was to assess if cultural competency training would lead to increased level of cultural competency among physiotherapists engaging in cross-cultural, clinical encounters.

Methods: To design and implement this project, fishbone analysis and Plan-Do-Study-Act cycle were used. Musculoskeletal physiotherapists voluntarily participated in this educational quality improvement project and undertook culture competency training, which was an e-learning course developed by Heath Education England. A retrospective evaluation method was used where, after completion of the training, participants were asked to rate their awareness, knowledge and skills related to the care of patients from diverse backgrounds after the training compared to before undertaking the training.

Results: The pre-and-post-training responses covered three constructs of Culture Competency: awareness, knowledge, and skills. Statistically significant increases were found in mean scores across all three constructs and in the mean aggregate cultural competency scores.

Conclusions/Implications for Practice: Improvement in levels of culture competency seems viable and achievable with training. Culture competency is a lifelong, dynamic process and requires continuing education. Therefore, further Plan-Do-Study-Act cycles are recommended with more advanced educational training sessions. Further projects should also evaluate the

effect of increased culture competency on patient outcomes. Lastly, culture competency must encompass issues beyond racial and ethnic difference, expanding to include health issues related to sexual orientation, socioeconomic status, disability and neurodiversity to help in reducing health inequalities and improve patient care.

Title: Coproducing an intervention to improve provision of information about recovery on the stroke unit (the FORECAST study)

Authors: Liz Hill, Sykes, L., Burton, L., Bates, S., Crocker, T., Todd, O., Forster, A.

Background: Many stroke survivors and families do not receive enough information about recovery, including how much recovery is expected and how long it might take to achieve. This information is important because it can help them to make decisions, plan for the future, and adjust to any continuing difficulties. Stroke unit staff can however find this information difficult to provide, particularly when it involves breaking bad news. Staff need to provide clear, consistent, and realistic information to their patients about recovery with compassion, whilst being careful that this information doesn't discourage patients' participation in rehabilitation. However, they receive little training in how to do this and can lack confidence. This project aims to develop an intervention to improve the quality, consistency, and delivery of information about recovery provided to stroke unit patients and their families.

Methods: Six multidisciplinary stroke unit staff from LTHT stroke units and five stroke survivors and four carers from Leeds-based community stroke groups were purposively sampled. Participants are attending six, monthly workshops, each lasting for three hours (November 2023-April 2024). We are using coproduction, a form of participatory action research, in which participants work together as equal partners to develop the intervention through a series of structured activities.

Results: To date, the group has identified priorities for the most important challenges to address in the intervention, and best practice guidelines for communicating information about recovery are in development. Future sessions will focus on creating a training package to improve staff communication skills and developing implementation plans, in preparation for a future clinical trial.

Conclusions/Implications for Practice: Progress has been made towards coproducing an evidenced-based and stakeholder-informed, staff-focused intervention to improve the quality, consistency, and delivery of information about recovery to stroke survivors and their families.

Title: Supporting LGBTQIA+ Young People

Authors: Stephanie Millar, Andi Cope, Belinda Loftus

Background: LGBTQIA+ young people are twice as likely to experience depression, anxiety, and panic attacks than their non-LGBTQIA+ peers. (Just Like Us 2021). This is Me! is a series of 5 1-hour workshops on the theme of identity. It is aimed at young people aged 11-to-16, experiencing low level well-being issues such as anxiety and low mood relating to gender and/or (a)sexuality. Since January 2023, the programme has been delivered in schools and community settings across Wakefield. It aims to build resilience and strategies to identify and respond to red flags. The programme incorporates bespoke, (specifically designed for LGBT) Relationships and Sex Education, so that the young people understand how to manage risks and keep safe. Participants can develop their sense of self-worth by contributing to school and the wider community as equality ambassadors.

Just Like Us (2021) Growing Up LGBT+ The impact of school, home and coronavirus on LGBT+ young people, Cibyl.

Methods: Qualitative and quantitative data has been gathered from start and endpoint assessments, student feedback forms and staff testimonials.

Results: Since January 2023, the programme has been delivered in 10 Wakefield schools, with participation from over 220 students. Data indicates improved resilience, and coping strategies. In a sample of 107 start and endpoint assessments, 47% of students agreed or strongly agreed with the statement 'I am proud of who I am', increasing to 73% by the end. At the start, only 13% of young people, agreed or strongly agreed with the statement, 'I know how to manage difficult emotions' increasing to 43%. Young people commonly describe the programme as 'helpful', 'inclusive' and 'fun'. Staff have described it as 'supportive and empowering'.

Conclusions/Implications for Practice: Data from this programme indicate the positive impact of safe spaces on resilience and well-being in LGBTQIA+ young people. Adequate training is needed so practitioners and educators feel confident supporting this demographic.

FINALIST

Title: Improving surveillance of intracranial aneurysms following endovascular neuro-interventional treatment

Authors: Adam January, Georgia Barnes, Laura Owen.

Background: Digital subtraction angiography (DSA) is the current gold standard for post-operative surveillance of intracranial aneurysms following endovascular treatment (De Leacy et al., 2019) (Psychogios et al., 2010). This is an invasive procedure, with high cost and risks associated with the arterial puncture and catheter navigation- (Kauffmann et al., 2007) (NICE, 2022). There is also an extended immobilisation period post-procedurally. An alternative, non-invasive surveillance option is intravenous angiographic computed tomography (IV ACT) (Yamamoto et al., 2019). IV ACT offers higher resolution imaging for device visualisation and is practised well internationally, with limited publication in the UK (Hansel et al., 2018).

Methods: A PDSA cycle was designed to aid the implementation of IV ACT, with the aim to improve patient experience whilst maintaining comparable diagnostic efficacy to DSA, reducing patient risk and enhancing resource utilisation. Performance indicators include time in theatre, equipment cost, staffing cost, complication rate and failure-to-diagnose rate with subsequent requirement for additional imaging.

Results: 12 patients have undergone IV ACT so far, with a reported 0% complication rate in comparison to 2.63% in DSA (De Leacy et al., 2019). 0% of IV ACT examinations required further imaging to achieve adequate visualisation of intracranial interventions. The mean examination time for IV ACT is 40 minutes, as opposed to 60.9 minutes for DSA. IV ACT is £193.87 less expensive, per patient.

Conclusions/Implications for Practice: This cohort demonstrates a plausible, non-invasive alternative for surveillance of post-treatment aneurysms. IV ACT offers higher spatial resolution imaging comparatively to computed tomography angiography and DSA (Hansel et al., 2018), at a lower cost, with reduced theatre time and specialist staff requirements. Radiographer-led IV ACT is a quicker, cheaper, lower risk and diagnostically effective surveillance option for treated intracranial aneurysms.

Limitations: Limited published literature available and small cohort size, whilst contemporaneous audit would allow more reliable assessment of performance indicators in future.

FINALIST

Title: An audit of Anterior Cruciate Ligament injury management in the NHS for the Yorkshire region

Authors: Niall Maher, Brogden, C., Lunn, D., Jones, G., Redmond, A., Buck, D., Broadbent, S., Liversidge, G., Murr, J., Siddle, H.

Background: Anterior Cruciate Ligament (ACL) injury represents a significant problem for the NHS, with patients requiring extensive rehabilitation and commonly surgical reconstruction, often leading to instability and future knee osteoarthritis. 1 Clinical guidelines suggest best practice but

emphasise a low level of certainty and ambiguity for each component of ACL rehabilitation. 2 We aimed to investigate current ACL injured patient pathways in the Yorkshire region.

Methods: Six Yorkshire NHS Trusts contributed to the audit, with a standard operating procedure adopted to retrospectively extract data on five randomised ACL patients per trust (Female n = 11; Male, n = 19 mean age 24.5 years, Standard Deviation [S.D] ± 6.5). Information relating to surgical and physiotherapy management was collated with descriptive statistics reported.

Results: Patients received specialist review (Mean = 16 ± 14.1 days; Median = 12, Interquartile range [IQR] = 14.3) post injury, with injuries diagnosed by orthopaedic surgeons and physiotherapists in 16 and 14 cases, respectively. 24 patients had ACL reconstruction, 6 were managed conservatively. Mean time to surgery was 152 ± 106.4 days (Median 124; IQR 120.3). On average, patients completed 20 ± 10.6 physiotherapy sessions (Median 22; IQR 15.5) and had a mean time to discharge of 406 ± 107.3 days (Median 426; IQR 196.5) with 22 of 30 patients completing their rehabilitation, and 16 of 27 sports related injury patients returning to sport. Patient Reported Outcome Measures were used in 10 of 30 cases to inform the rehabilitation process.

Conclusions/Implications for Practice: The audit highlights variability of care provided to ACL injured patients in the Yorkshire region Further research is required to determine whether the results observed at a regional level are also evident nationally. This knowledge will help to inform effective management of ACL injuries in the NHS and could help to understand the variability observed in recovery from ACL.

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Title: A digital tool to improve patient awareness and personalise the MRI-experience to ensure increased successful scan outcomes for high-resolution musculoskeletal MRI.

Authors: Vithanage Nagitha Wijayathunga, Pandit, H., Bertham, D., Rebane, A., Atkinson, E., Wilson, D., Wilcox, R.

Background: As part of a previous Wellcome ISSF fellowship, work was performed to optimise quantitative-MRI techniques for the improved measurement of human subjects. It was found better MRI outcomes were achieved when the scanning process was customised using gathered information on each patient's comfort, tolerances, and personal conditions (eg: back pain, fibromyalgia), and when patients had a better awareness of the examination procedure.

Hence, the aim of this pilot study (funded through the School of Mechanical Engineering, University of Leeds) was to develop a digital tool (app) to help inform patients, personalise their MRI-experience, and collect patient factor information to improve scan outcomes across patient cohorts.

Methods: Initial development of the digital tool was in the form of a 'mobile friendly web-portal', that adheres to the NHS Digital Technology Assessment Criteria (DTAC) framework.

The front end of the web-portal includes video clips which collectively provide information to improve awareness of the MRI-examination and reduce any uncertainties or apprehensions, in addition to outlining strategies to prepare better and stay calm when undergoing an MRI examination. Beyond the front end, there is a password protected secure area for each patient/participant, to share information with the clinical/research team so that the MRI examination could be better prepared and customised for each patient/participant."

Results: "The prototype is accessible via the URL; <https://kards.pcmdev.co.uk/>. The web-portal functionality was tested using multiple/different mobile devices. No limitations to its intended appearance and functionality were observed. This was followed by trialling it using several patients who were undergoing MSK-MRI scanning, which resulted very positive feedback and improvements in scanning outcomes.

Conclusions/Implications for Practice: The digital tool/app will change the way patients are prepared for their scanning as well as how the session are organised to perform the scans, resulting better patient compliance, and ultimately in more consistent and better MRI outcomes across a wider cohort of patients.

Title: Maximising the Impact of Volunteers - a Strategic Approach

Authors: Tifaine Carter, Rogers, S.

Background: The Voluntary Services Team (VST) have tested a more strategic approach to volunteering (Kings Fund, How can a strategic approach to volunteering in NHS trusts add value? May 2022) and maximise impact by measuring the added value for the patients, staff and volunteers. This approach was tested on L49 where volunteers support children and their families going for day case surgery.

"**Methods:** The VST collaborated with colleagues to agree a clear role profile, identify a volunteer champion to provide practical support and agree mechanisms for feedback aligned to the three pillars of added value (Kings Fund, May 2022).

To gather patient and carer feedback we designed specific feedback fields into the Friends and Family Test (FFT). Staff were surveyed regularly to capture their experience. Volunteers were asked to provide feedback and log their hours.

Results: In Q1. April-June: Patients providing FFT feedback 37.4% reported being supported by a volunteer. They said, 'made me my daughter and my mum feel so special...your volunteer was so lovely'. Staff said, 'The moment I see the volunteers coming on to the ward, I know the shift is going to be a lot easier.' 100% of staff agree that volunteers make a positive difference to patients/carers, that volunteers positively impact staff and volunteers free up staff time. On average staff estimate that a volunteer frees up 51 minutes per shift. This equated to 35.7 hours of staff time saved. 6 volunteers gifted 156 hours. 100% of volunteers agreed that their role was rewarding and made a positive impact of staff and patients/carers. Volunteers said, 'Excellent support, always there at the end of an email, phone call if required' about the VST.

Conclusions/Implications for Practice: Having a dedicated volunteer workforce that is well supported and engaged improves staff wellbeing and frees up clinical time. With the correct infrastructure to recruit, train and support volunteers, we would plan to scale and spread this approach across LTH in line with the organisational priorities.

Title: Inappropriate laxative prescribing following a pelvic exenteration whilst in critical care.

Authors: Oluwatofunmi Bandele, Victoria Burrell

Background: A total pelvic exenteration (TPE) is a complex surgical procedure for advanced pelvic cancers¹. The extent of the surgery depends on the spread of cancer but generally involves partial or full removal of pelvic organs such as the uterus, bladder, and bowel, with the majority requiring a colostomy. Following the surgery, patients are stepped down to critical care. The critical care bowel protocol was introduced in 2022 to prevent constipation. A relative exclusion criterion for

laxative prescribing includes post-gastrointestinal surgery. Newly formed stomas normally do not produce stool output for several days and then may require loperamide to reduce their output depending on the proportion and location of the bowel removed. Therefore, the immediate administration of laxatives post pelvic exenteration is inappropriate and may increase the patients' risk of an anastomotic leak. Aim: To analyse inappropriate laxative prescribing following a pelvic exenteration on critical care. Objectives: 1.) Review the proportion of laxatives prescribed and administered following TPE. 2.) Improve the laxative prescribing practice in critical care through education to nurses, doctors, ACCPs, and pharmacists. 3.) Analyse which staff identified and ceased inappropriate laxative prescriptions.

Methods: 18 patients met the inclusion criteria of this retrospective audit conducted at Leeds Teaching Hospital from January 2023 to June 2023. Each patient's eMeds chart was analysed for laxatives and results were documented.

Results: 39% of patients were prescribed laxatives in critical care post TPE. Of the 7 patients prescribed laxatives, 57% of patients were administered laxatives. Median number of laxative doses administered is 3, mean doses is 1.5. 6 out of 7 laxatives were ceased in critical care, 67% by a pharmacist, 33% by an Advanced Clinical Practitioner.

Conclusions/Implications for Practice: Generally, patients are being inappropriately prescribed and administered laxatives immediately following a TPE. More education is required for the multi-dispensary critical care team.

Title: Proximal hamstring tendon avulsions - functional outcomes following surgical repair

Authors: Erin Demoulin, Maher, N., Holton, C.

Background: Avulsion of the proximal hamstring tendon is an infrequently encountered debilitating injury. Partial tears with minimal retraction are commonly conservatively managed, whereas complete tears with ongoing pain and poor function do better with surgical repair. Tendon repair surgery involves a period of immobilisation and prolonged rehabilitation, and patients find the decision to undergo surgery a difficult one - particularly in the acute period. Patient Reported Outcome Measures allow clinicians to monitor patient recovery and better counsel patients pre- and post-operatively. This study aims to assess a single surgeon case series of proximal hamstring avulsions to evaluate pre and post-operative outcomes of surgical repair."

Methods: A retrospective series of 5 surgically managed patients with a mean age of 55. Patients were followed up for an average of 8.0 months (range: 1.3-11.7 months) pre-and post-operative functional outcomes were assessed using the Perth Hamstring Assessment Tool. (PHAT)

Results: Average time from injury to procedure was 4.2 months (range: 3.1-5.4 months). All patients had Wood Classification Type 5a complete avulsions with average retraction of 6cm (range: 2.5-11cm). In all cases, surgery was performed with a plastic surgeon present due to scarring around the sciatic nerve. There were no intra-operative or acute post-operative complications such as nerve injury, wound infection or acute rupture. There were no long-term complications such as re-rupture or need for further surgery. Significant improvements were seen in functional outcome scores at both 6 months and 1 year. There was a mean PHAT score improvement of 48 at the 1-year follow-up.

Conclusions/Implications for Practice:

This case series demonstrates that current practice in the surgical repair of proximal hamstring avulsions results in improved patient outcomes.

Title: Procalcitonin (PCT) in Early Onset Neonatal Sepsis (EONS). Has it been helpful?

Authors: Sri Vidya Sundara, Hughes B., Ourania Pappa, Elizabeth McKechnie.

Background: PCT is a more sensitive marker of infection than C-reactive protein (CRP) and may reduce antibiotic duration in EONS. This could help in reduction of antimicrobial exposure and Gram negative blood stream infections as part of robust antimicrobial stewardship. However, PCT is sensitive and not specific and the non infectious causes of PCT rise can confuse clinicians.

Methods: PCT was measured- additionally to second CRP- as part of septic screening for suspected EONS in those admitted to the Neonatal Units in Leeds. PCT results were interpreted and acted upon using an evidence-based flow-diagram. Data was collected over a 3- month period.

Results: Babies were categorized in four groups based on their gestational age and place of birth; 207 babies were reviewed. 61/207 (29.5%) were not screened/ started on Abx. 28/207 (13.5%) were treated but had no PCT requested. 35/207 (16.9%) had one or more insufficient samples as per laboratory reports. The remaining 83 cases (40.1% of total admissions) had PCT available. - 63/83 (76%) had low PCT. 7/83 (8.4%) had low PCT and high CRP. 20/83 (24%) had low CRP and unexpectedly high PCT. 4/83 (4.8%) had high PCT and CRP. 16/63 (25.3%) of cases with low PCT had antibiotics stopped at 24hours. For the remaining cases, the length of treatment varied from (mainly) 36hours to 5 days depending also on clinical condition. All BC were negative. Clinicians opted for 5 days of treatment in cases of high CRP but low PCT and there was a significant variability in decision making in the low CRP, high PCT cases.

Conclusions/Implications for Practice: PCT is a powerful tool to assist early cessation of treatment but may be erroneously high in clinically-well babies being screened for EOS and should not be used in isolation to dictate antibiotic duration.

References

1. Procalcitonin- guided decision making for duration of antibiotic therapy in neonates with suspected early onset neonatal sepsis: a multicentre, randomised, controlled trial (NeoPInS), Stocker M et al, The Lancet, 2017"

Title: Integrated Research sample management laboratories.

Authors: Helena Baker, Gereanu, G., Sedgwick,J.

Background: The CRF sample processing laboratories at Leeds General Infirmary (LGI) and St James University Hospital (SJUH) Integrated to create a coordinated "Sample Management Laboratory" . The aim of the laboratory integration was to standardise practice, improving quality and compliance to Good Clinical Practice

Methods: The integration required the consolidation of : Line management, Staffing structure, Equipment, Workflow, Documentation, Quality compliance. The consultation was led a by newly appointed laboratory manager. The consultations were held with the LCRF quality manger, nursing teams, laboratory teams and the Leeds Biobanking and Sample Processing Lab (LBSPL) . The laboratory process' were compare including: Staffing, Workload, Equipment, Workflows, Documentation, Standard Operating Procedures /quality management.

Results: The resulting procedure included: Staffing - Recruitment of 1 band 4 technician and 2 band 3 technicians to work across site; Documentation - New laboratory site file for each study containing the laboratory manual and sample processing documentation, New sample request forms with standardised study information, Revised processing audit form, New laboratory system, to enable laboratory staff to plan their workload; Communication - New laboratory manual tracker with lead research nurse contact details; Reporting - New procedures for reporting deviations from the laboratory manual procedure and root cause analysis; Activity monitoring - New sample processing tracker to monitor the staff workload and assess future capacity

Conclusions/Implications for Practice: In conclusion the integration Research Sample management laboratory's, improved efficiency and quality. The labs have sufficient staff to cover sample processing during core hours, reducing the need for delivery teams' staff to process samples. The standardisation of both laboratories allows for cross site staff cover reducing the staffing pressure on the service. Better communications with the delivery team allows problems to be dealt with swiftly. The booking system allows the laboratory staff to plan their time more effectively. The new workflow in the laboratory has improved productivity and reduced deviations.

Title: Post-mortem Clinical Genetics Referrals in Sudden Unexpected Death (SUD): a Quality Improvement Project of the 'Next Steps'

Authors: Katrina Freimane, Ashcroft, K., Hawrot, H., Griffin, K.

Background: Post-mortems (PM) establish cause of death, inform healthcare statistics and answer family questions. The BHF estimates that >800 people aged <35 die annually in the UK due to Sudden Cardiac Death (SCD), necessitating diagnosis of any underlying genetic disease to screen surviving family and prevent further deaths. All SCDs should have expert review, PM tissue retained and relatives offered Clinical Genetics (CG) referral. Whilst the ongoing NHS-C-SUD pilot should establish nationally standardised pathways, we reviewed Leeds practice, aiming to improve experiences of the bereaved.

Methods: We interrogated CoPath with a free-text search (gene*) for SUD cases from 2018-2023, cross-referencing these with stored genetic material and patients with a "molecular autopsy"/"aortopathy" screening panel. We liaised with CG to identify relative follow-up and surveyed regional Coroner's Officers to gather experiences of discussing genetic conditions with the bereaved.

Results: We identified 126 cases. After removal of duplicates and paediatric/external referrals, 9 remained for analysis. The average age of the deceased was 41 (18-56). Cause of death was aortopathy/valve disease in 7 and genetic material was retained in 89% cases. Only 2 families had been assessed by CG at the time of analysis. The Coroner's Officers survey yielded a 50% response rate, with the majority indicating low confidence (<5/10) in discussing genetic conditions. Free-text comments indicated that a 'family-friendly' standardised leaflet would be beneficial in such cases.

Conclusions/Implications for Practice: Our investigations suggest a large number of potential CG referrals are lost to follow-up. We liaised with the Sheffield NHS-C-SUD coordinator to establish beneficial practices, in partnership with our Senior Coroner. Next steps include designing an education programme and developing communication material following structured interviews to ensure we understand and meet the needs of the bereaved. We would like to acknowledge the support of our Senior Coroner (Mr McLoughlin) and his team in enabling us to undertake this work.

Title: Innovating the provision of foot orthotics with the introduction of 3D printing

Authors: Kate Chauhan, Murfin, J., Drake, P., Hattersley, R., Callaghan, A., Smith, M., Campbell, B.

Background: Foot orthotics are provided by the orthotic service to improve biomechanical function and reduce pain. Manufacture is usually in ethyl-vinyl acetate (EVA), which is shaped to an impression of the foot, up to 80% of the material is wasted in this process. A quality improvement project was initiated to identify a manufacturing solution that has a reduced environmental impact.

Methods: A quality improvement method was used to evaluate the provision of custom foot orthoses by Steeper group, with a continuous process of evaluation and adaptation. Energy use, material waste, manufacturing time including post-production of our current provision was reviewed and set as a benchmark against an improved solution. Key stakeholders across the

clinical, technical, and production; both frontline and managerial were included in the process to ensure that the solution chosen was fit for purpose.

Results: We identified and introduced an additive 3D printing solution. This was tested in small clinical areas initially with a short feedback loop supporting constant evaluation of the process. This was then introduced over a wider geographical area. Results achieved so far:

A reduction of CO2 from energy use of 951 kg; A reduction of EVA waste of 13,650 kg p.a.; A reduction in hands on production time from 30 minutes to 15 minutes per insole. Secondary outcomes were: Increased opportunity for optimisation of prescription, up to 18 different densities can be used within each 3D print compared to 2 for EVA insoles; Ability to provide thinner insoles improving fit and acceptability.

Conclusions/Implications for Practice: The use of 3D printed insoles has now been adopted as an alternative to EVA insoles. This has supported the NHS net zero promise with a significant reduction in energy usage and material waste. We have been able to provide a superior orthosis with a reduced environmental impact to our clinicians.

Title: Introducing computer aided design and manufacture to orthotic scoliosis treatment.

Authors: Kate Chauhan, Haynes, A.

Background: Scoliosis describes a condition where there is a curve in the spine of greater than 10 degrees with a rotational element. This condition develops in children and can have a known or an unknown cause. Without management scoliosis can cause pain and disability. Our centre has historically been hesitant to engage with orthotic management of scoliosis. Due to the impact of Covid on surgical availability, a change in clinical staff and a greater body of evidence supporting the efficacy of orthotic management, there was an opportunity for the orthotic department to engage with the spinal service. Since 2020 we have been working closely with the spinal surgery team and have invested in training in Cheneau principles, scanning and computer aided design (CAD) technologies, and a vacuum cushion for our neurological case load. These changes have contributed to a change in our clinical culture.

Methods: Using a quality improvement cycle we developed the service from using symmetrical braces manufactured to measurements to asymmetrical hypercorrective braces manufactures using computer aided design and manufacture.

Results: Pre 2020 we provided up to 12 scoliosis orthoses a year for all our patient groups including early onset, adolescent idiopathic scoliosis and neurological curves; in 2023 we provided 97 orthoses, an increase of over 800%. Patients have expressed that scanning is preferable to casting and reduces appointment times by 50%. The asymmetrical hypercorrective braces provide greater in brace correction which is an indicator improved outcome and reduced risk of surgery. The patients have greater self-reported compliance and comfort in the new design.

Conclusions/Implications for Practice: By developing our skills and service we have improved the patient experience, our in-brace scoliosis correction and have been able to accommodate the increase in caseload.

Title: Inclusive interprofessional teamwork education: advancing collaborative culture

Authors: Emily Langford, Jain, S.

Background: High quality team working has benefits on patient care and staff wellbeing. Recent evidence suggests more needs to be done to advance teamwork education. Recommendations from The Francis Inquiry Report, 2013, stated that there needs to be effective teamwork between all staff members, with the contributions from cleaners, maintenance staff and catering colleagues being recognised and valued. More recently, The Ockenden Report exposed failures in teamworking, poor working relationships and a culture of bullying.

Methods: Creation of a half day workshop entitled ‘Team Building Workshop: Nurturing a culture of kindness, collaboration, cohesion and civility.’ Focusing on building compassionate relationships, breaking down hierarchies and fostering an ethos of team unity.

We have run 3 workshops within LTHT with over 125 staff members attending from a range of professional backgrounds. Quantitative and Qualitative feedback was collected after the educational event via MS Forms.

Results: 83 participants completed the feedback form across the 3 workshops. On a scale of 1-10, 8.4/10 would recommend the workshop to a friend or colleague? 73/83 felt a follow up session would be useful. 100% of respondents agreed with the statement: The workshops enabled me to build relationships with colleagues. 98% agreed with: The workshops made me feel like my voice is important. 91% stated that the workshops made them feel valued in their team and made them excited for the future of their team. Qualitative data revealed the most common themes were: Inclusivity, Value, Equality, Empowered and Build Relationships.

Conclusions/Implications for Practice: Interprofessional teamworking education is valued by staff and colleagues within the healthcare setting. To improve teamworking, education needs to be inclusive to all staff members and embed a culture of equity. In order to further evaluate the workshops success, we need to analyse behaviour change and evaluate staff satisfaction surveys.

Title: LTH Drug monitoring data in TB and other infections

Authors: Katie Drury, Iroegbu, U., Sethi, K., McGill, F.

Background: Amikacin is an antibiotic used to treat people with severe infections and non-tuberculous mycobacterium infections. It is important to monitor drug levels in the blood. If they are too high, they can cause long term hearing loss and problems with the kidneys. Too low and they may not treat the infection effectively. Levels are sent to other laboratories to be tested. In just a three-month period, this cost over £2000. Correct monitoring is important to improve patient care and to reduce waste of limited resources. Monitoring required is different between patient groups.

Methods: A audit proforma was created using the Leeds Teaching Hospital intravenous Amikacin guidelines before the second dose and then twice a week if treatment continues) and British thoracic Society guidelines for Non-tuberculous mycobacterium (NTM). Pharmacy provided list of patients who received amikacin over a 6-month period from 1st June 2022 to 31st December 2022. Information was gathered from the online patient record system and microbiology system. 82 episodes of intravenous amikacin prescription identified. 60 of these included.

Results: Majority of prescriptions for Haemato-oncology patients (83%) with associated neutropenic sepsis (78%).80% had samples taken before the second dose. Incorrect sampling led to £144 waste and left 5 patients left at risk of toxicity. 18 of 32 samples sent for ongoing monitoring (excluding NTM) available, waste of £873.60. Mostly due samples taken the day treatment stopped. Only 3 prescriptions for NMT, poor compliance with monitoring with potential for patient harm and lots of waste (£433.80). Only 33% of samples a result authorised within 2 days. Half take over 3 days to come back.

Conclusions/Implications for Practice: Improvement are required to optimise patient care and reduce waste. There is a delay in results been available for clinical teams. This gives potential risk for toxicity.

Title: LTHT Therapeutic Drug Monitoring Data In TB (and other infections)

Authors: Uchechika Iroegbu, Kavita Sethi, Dr Fiona McGill.

Background: Therapeutic drug monitoring (TDM) is performed for a number of reasons including suspected malabsorption, ensuring therapeutic dosing, monitoring renal impairment and assessing poor treatment response. Aims of the project include improving the knowledge and

compliance with sampling for therapeutic drug monitoring, reducing avoidable costs to the trust and patients and improving efficiency in obtaining results.

Methods: Antimicrobials sent for TDM (Rifampicin, Isoniazid, Pyrazinamide, Levofloxacin, Moxifloxacin, Ganciclovir, Colistin) and laboratory turnaround times for these between 1st October 2022 and 31st December 2022 were obtained from telepath and with the help of the pathology IT team. 58 samples were identified. Specialities involved included Infectious diseases, TB clinic, Intensive care, Neurorehabilitation and Hepatology.

Results: 1. Avoidable sampling across all antimicrobials due to wrong timing, wrong bottles and insufficient sample volume. 2. Significant financial implications of avoidable sampling. Over the 3 months reviewed, the avoidable cost incurred was £6950.10. 3. Variability in reference laboratory turnaround times (Range 2– 93 days)

Conclusions/Implications for Practice:

Conclusions: 1. Multifactorial reasons for poor compliance with adequate sampling. 2. Insufficient documentation of actions taken with results obtained. 3. Long turnaround times of reference laboratory. Implications for practice: 1. Financial cost to the trust 2. Staff recurrent exposure to patient and samples leading to increased risk to staff 3. Patient recurrent venepuncture, pain and anxiety related to recurrent sampling. 4. Variability in turn around times from reference lab leading to delay in patient management and increases possibility of re-sampling. These results have been presented at the joint microbiology and infectious diseases quality improvement forum, to the TB MDT, pathology lab team and has been added to J20 induction. Since the above, there have been 2 TB TDMs sent off and accuracy has been 100%. Future plans include extending education to wider trust, contacting the reference laboratory and re-auditing in a year's time.

References:

1. <http://www.tbdrugmonographs.co.uk/>

Title: LTHT 3D Planning Services- an emerging integral speciality in healthcare

Authors: Jiten Parmar, Lisa Ferrie

Background: We wish to showcase the newly formed 3D planning services and the work that we have achieved across the trust using cutting edge 3D segmentation work and diagnostic skills enabling clinicians to make surgical cutting guides, plan for complex reconstructions and to improve on operating times. Our in house biomedical engineer has developed a pathway for cardiac surgery, maxillofacial surgery, neurosurgery and orthopaedics. Together we have allowed clinicians to selectively choose which cases can be successfully be operated on, with the use of custom made devices.

Methods: We will present cases and the technology used to highlight our surgical successes.

Results: To day, we have helped develop congenital cardiac pathways, reduced the expenditure on cranioplasties and have used the diagnostic tools to provide surgical options when none were previously possible.

Conclusions/Implications for Practice: the 3D planning service is becoming embedded in the workflows of departments within LTHT and will be integral to the innovation of surgery within Leeds.

Title: Subtypes of Steatotic Liver Disease have differing clinical outcomes

Authors: Katrina Pekarska, Hinkson, A., Rowe, I., Parker, R.

Background: Steatotic liver disease (SLD) is a major health problem, and it includes a spectrum of diseases caused by cardiometabolic risk factors and alcohol including metabolic dysfunction associated steatotic liver disease (MASLD), metabolic alcohol associated liver disease (MetALD) and alcohol related liver disease (ALD). We aimed to investigate the risk of all cause, liver-related outcomes in MASLD, MetALD and ALD.

Methods: Patients who underwent liver biopsy for diagnosis/staging of NAFLD (non-alcoholic fatty liver disease) or ALD in routine practice at LHHT. NAFLD and ALD cohorts were reclassified into three SLD cohorts. Cox proportional hazards regression analysis was performed to understand the outcomes in SLD patients.

Results: 712 patients were included with a mean age of 51 (SD=12.7) years. In old classification terms, 528 had a diagnosis of NAFLD, and 184 had ALD. After reclassification 477 (67%) had MASLD, 100 (14%) - MetALD and 135 (19%) - ALD. Patients with MASLD had significantly higher BMI ($p<0.001$), hypercholesterolaemia ($p<0.001$), more diabetes mellitus ($p<0.001$). Patients were followed up after biopsy for a median of 55.5 months (IQR 26-81), during which time 75 (11%) patients died, including 30 liver-related deaths. Mortality was commonest in ALD (49 deaths), compared to MetALD (13 deaths) and MASLD (13 deaths). Death due to decompensated liver disease was more frequent in ALD patients ($p=0.044$), 66.7% of all deaths in ALD cohort. Multivariate Cox proportional hazards regression adjusting for baseline fibrosis stage showed a hazard ratio for death of patients with ALD of 5.59 (95% confidence interval, 2.74 – 11.4, $p<0.001$) compared to MASLD.

Conclusions/Implications for Practice: ALD carries the highest risk of all-cause/liver-related mortality. To reduce the burden alcohol should be a priority for policy makers. It is very important to alert physicians to advise against alcohol intake as well as to have a good public education regarding alcohol intake and its effect on liver health.

Title: Age impacts the diagnostic ability of the enhanced liver fibrosis test for advanced fibrosis in MASLD

Authors: Katrina Pekarska, Hinkson, A., Rowe, I., Parker, R.

Background: Metabolic dysfunction associated liver disease (MASLD) can progress to fibrosis/cirrhosis. Detection of fibrosis is an important diagnostic step. Several non-invasive fibrosis scores, including enhanced liver fibrosis test (ELF-t), are utilised to identify/exclude advanced fibrosis (AdF). ELF-t has been validated in patients aged 35-60 years and ELF-t ≥ 9.8 indicates a significant fibrosis. The aim was to assess the effect of age on the performance of ELF-t in MASLD.

Methods: Patients who underwent a liver biopsy for diagnosis/staging of MASLD at LHHT. Patients were divided into four age-based groups: <40 ($n=52$), 40-49 ($n=61$), 50-59 ($n=111$), ≥ 60 ($n=81$). The performance of ELF-t for AdF stage for each age group was assessed using liver biopsy as the standard and (AUROC) curve.

Results: We included 305 patients. The median BMI was 35kg/m² (IQR 31-40) and 60% of patients were male. Diabetes mellitus was present in 160 (52%), hypercholesterolaemia in 133 (48%). The median age was 54 (IQR 44-60). 120 patients had AdF. Overall, the ELF-t performed well to predict AdF: AUROC 0.74. The performance of the ELF-t was particularly good in patients aged >40 : AUROC 0.93. The performance of the ELF-t was worse in other age groups: 40-49, AUROC 0.70; 50-59, AUROC 0.68; and ≥ 60 , AUROC 0.72. The sensitivity (sens.) of the ELF-t in all age groups was $<70\%$ and dropped to 42% in those aged 40-49. Optimal cut-offs for each age group were calculated: the optimal ELF-t cut-point increased from younger to older patients: 9.3 for patients aged <40 (sens. 100%), 9.34 for patients 40-49 (sens. 73%), 10 for patients 50-59 (sens. 69%) and 10.3 for patients aged ≥ 60 (sens. 75%).

Conclusions/Implications for Practice: The ELF-t has excellent performance to diagnose AdF in those aged <40 years, however the diagnostic performance falls with age. New ELF-t thresholds for AdF are proposed to reduce the number of positive cases missed.

Title: Evolution of a specialist radiographer-led genitourinary fluoroscopy service: The impact on the radiology department

Authors: Kathryn Murrell, Michelle Scaife, Amy Dixon.

Background: Since 2015 a specialist radiographer (SR) has successfully undertaken role extension by performing cystograms and urethrograms and providing image interpretation. Their training was delivered in-house, with assessment through completion of reflective log-books. A genitourinary consultant radiologist (GUCR) identified potential for their scope of practice to be extended to all urology fluoroscopy procedures, including interventional procedures such as nephrostomy exchanges.

Methods: Initial training for the SR was provided by GUCRs. Subsequent training for newly appointed radiographers to this role was predominantly delivered by the experienced SR, with medical input from GUCRs.

Results: Developing this service has reduced the time GUCRs are required to be present for these sessions, allowing them to undertake more complex work. Expanding the service has reduced patient waiting times and increased patient satisfaction. The service avoids hospital admissions, which is cost effective and patient centred. SRs leading the service have more involvement in patient pathways, resulting in increased job satisfaction and better patient experience. SRs utilise their expert knowledge to support radiographer colleagues, improving efficiency and reducing stress in the day-to-day running of the department.

Conclusions/Implications for Practice: SRs provide an efficient genitourinary fluoroscopy service that reduces the radiologist's workload and improves patient and staff experiences. It's a model that can be utilised by other radiology departments. As a team we have significantly cut costs in terms of stock, admissions and staffing.

Title: Using the Leeds Improvement Method to Create User-Friendly Working Instructions and Improve the Quality of Service within the Haematology Clinical Trials Team.

Authors: Clementine Constance Bird, Sean Harrison, Ayat Almurshidi, Lewis Jefferson, Lucy China, Will Rice.

Background: Using the Leeds Improvement Method (LIM), improvements were made to the working instructions (WIs), a set of documents used by the clinical team to guide them through patient visits, in line with the trial protocol, used by the clinical trials team.

Methods: Using Taichi Ohno's 7 wastes of lean model (Mary Seacole Programme, 2023), an area of waste within the practices of our team was identified. The WIs were not very user-friendly, leading to them being filled out incorrectly. This added movement and over-processing waste to staff activities. Huge time-savings could be made if the WIs had been filled out in full at the time the forms were originally used in clinic. Small changes were made to the WIs based on feedback from the team, which were then used by a subset of staff. It was important to only make small changes to this key document for our department; the impact of any changes on service delivery needed to be observed and evaluated before this change could be fully implemented. Once implemented, the effectiveness of the change was measured using a scoring system developed based on the ALCOAC principles (National Institute of Health Research), comparing the score of the original WIs to the updated version.

Results: This process of small improvements and evaluation was continued, until a higher scoring template that was easy for nurses to use and increased the uninterrupted flow of data entry for data staff was found.

Conclusions/Implications for Practice: Through modifying the WI template, value has been added in the form of process efficiency. This led to reduced number of missing data points in the WIs and could lead to decreased time taken to complete data entry in the future.

Title: A review of pre labelled medicines usage in Same Day Emergency Care

Authors: Matthew Brown, Sadiq, A.

Background: The Same Day Emergency Care (SDEC) Unit stocks several pre labelled medicines (PLM), to allow supply against a prescription without further pharmacy involvement. The labels

require clinical staff to input the patient's name and date of issue. These medicines increase efficiency and safety by supplying appropriately labelled medicines when a dedicated pharmacy service is not available. This audit was to ensure procedure for this action was being followed and to delve into other opportunities to improve clinically and cost-effectively.

Methods: Patients receiving discharge letters from SDEC between 6pm and midnight for the whole month of September 2023 were identified and put through a data collection tool on Microsoft excel. This allowed discharges to be interrogated for completion metrics, PLMs, documentation of dispensing and analysis of common gaps in adhering to procedure.

Results: 434 patients were identified with 34% of them being discharged out of hours (past 9pm) and 16 contained only PLMs making them eligible for examination. 93% of all discharges met the procedure requirements but those containing only PLMs met the procedure a mere eight of the time. Over 80% of PLMs were made up of antibiotics and analgesia.

Conclusions/Implications for Practice: The month of September had only 4.8% of discharges containing PLMs, this needs to be mapped across the year to see if there are any other trends e.g. more antibiotics and steroids in winter months with respiratory burden on the front door. Clinically, PLMs cover a broad range of conditions and medicine classes but only 5 different medicines were used out of a possible 22. This indicates need for review and potential cost-savings. Several specific cases had patients waiting overnight with incorrect adherence to PLM procedure which led to avoidable delays. Further work around improvement and education on PLMs can help influence discharge within SDEC and other areas of the trust.

Title: Custom list discharge printing improvement project

Authors: Victoria Burrell, Brown, M., Walker, C., Duke, E., Short, W.

Background: Leeds Teaching Hospital Trust uses eMeds to prescribe and validate discharge medications. Communication processes to print discharges varied, including phone calls and 'eNonstock'. 'eNonstock' is a bespoke programme used for printing eDans. Anecdotal log-in issues, limited character space and unreliability of 'eNonstock' contributed to delays, staff frustration and miscommunication. The aim of this project was to implement custom lists on PPM+, to standardise the method of identifying eDans ready for dispensing.

Methods: "The following data was collected at baseline and after project implementation: 1. Emotional touchpoint questionnaires from ward and dispensary pharmacy staff to establish opinions on printing discharges. 2. Median waiting times from validation to printing, and from validation to release. Dispensary custom lists were created. MMPS discharge improvement group supported the department wide implementation.

Results:

Median time	Prior	After
Validation to printing	0:03:17	0:06:16
Validation to release	1:12:46	1:12.03
Dispensary staff survey	Prior	After
Miscommunication (negative comments)	71%	43%
Phone calls to print eDans (negative comments)	64%	43%
Phone calls to print eDans (positive comments)	14%	29%
Process opinion (positive comments)	29%	64%
Pharmacy ward staff survey	Prior	After
eDan printing (negative comments)	61%	23%
eDan printing (positive comments)	16%	46%
Miscommunication (positive comments)	20%	23%

Miscommunication (negative comments)	33%	15%	
<p>Conclusions/Implications for Practice: This project has improved opinions on the eDan process, miscommunication and phone calls. This hopefully means there is a positive impact on staff morale and patient safety, without affecting the overall time it takes to dispense. Multiple logins to different systems is time consuming and requires staff to remember different passwords. This project has standardised our practice and enabled the removal of 'eNonstock' for eDan printing. This reduction in administrative burden will free up staff for patient care.</p>			
<p>Title: Improving bone health assessment in older people Authors: Despoina Tseke, Rajeswaran, T., Eaves, C. Background: Fragility fractures are fractures that result from mechanical forces that would not normally result in fracture and are the clinical outcome of osteoporosis. The Fracture Risk Assessment Tool (FRAX) is a tool that predicts fracture incidence over a period of time and can help with risk stratification and ongoing management. We evaluated how effectively the FRAX score is used to identify patients at risk of osteoporotic fractures at Leeds Teaching Hospitals NHS Trust. Methods: We reviewed patient notes from those admitted to the acute geriatrics admission wards in Leeds on two occasions, a week apart. Our primary measures included: proportion of patients admitted with a fall; proportion of those who had sustained a fracture on this admission; proportion of those admitted with a fall, who had a FRAX score completed. Our secondary measures evaluated for pre-existing history of osteoporosis and fragility fractures. Results: We reviewed the notes of 117 patients. Median age was 87yrs, and median Clinician Frailty Score was 5. 35% of these patients had been admitted following a fall, out of which 9.8% had sustained a fracture. 0% of patients admitted with a fall had FRAX score completed. From our secondary measures, 41.5% of those who were admitted with a fall had had a previous fragility fracture; 17% had an existing diagnosis of osteoporosis and only 4.9% were already on treatment for osteoporosis. Conclusions/Implications for Practice: We concluded that falls and fractures were a common reason for admission. However, none of these patients were evaluated for their risk of osteoporosis using the FRAX assessment. We are likely missing the opportunity to treat many patients, to reduce their risk of fractures. In order to tackle this, we plan to increase awareness by educating junior doctors via local teaching, creating an accessible flowchart and installing prompts such as posters on the wards.</p>			
<p>FINALIST Title: Evaluation of the UK's Nationally Commissioned NHS Children and Young People's Diabetes DigiBete Platform and App Authors: Fiona Campbell, Julian, M., Mullier, C., Hanson, F., Julian, R., Hughes, J. Background: DigiBete is a community-led, clinically approved NHS self-management Platform and App for Children, Young People and their Families (CYPF) living with Type 1 Diabetes (T1D). An independent academic team was commissioned to evaluate the utility of DigiBete in respect of the self-management education and improved outcomes for CYPF with T1D, to confirm DigiBete's on-going efficacy and value as a resource for both Healthcare Professionals (HCPs) and CYPF. Methods: 5 sites took part in the evaluation. Three main quantitative and qualitative data collection measures were employed: 1. Quantitate CYPF App data captured via the DigiBete database. 2. Online surveys with HCPs (N=178 respondents), CYPF (N=1,165 respondents,) evaluating the impact of the platform. 3. Interviews (n = 63) were undertaken with 38 CYPF and 25 HCPs. Results: The findings indicate that CYPF and HCPs found the app an essential tool in the management of T1D, trusted for information accessed at any time and invaluable in an emergency</p>			

or unknown situation. N=1,139 DigiBete App users found across the sites, indicated a wide reach across the service. App users had been diagnosed between 3.1 and 4.2 years. 4,855 Videos viewed across the participating sites, an average of 1,213 videos per site with 84% HCPs reported they agreed that having access to the DigiBete App helped patients to manage their T1D and 95% agreed they would recommend DigiBete. 58% HCPs agreed or strongly agreed that the DigiBete App was saving their service time and money.

Conclusions/Implications for Practice: HCPs demonstrated a comprehensive understanding of the benefits of DigiBete enabling their CYPF to embed the App as part of standard care. Adoption of DigiBete with has led to an average of 226 quizzes being achieved per site, 1 per user supporting the development of skills essential for living with T1D. The model is now being extended to Pakistan.

Title: Is a mole-mapping device for patients with multiple and/or atypical naevi superior to standard photography in an NHS Pigmented Lesion Clinic?

Authors: Sundip Kaur Hira, Smith, A., Hinchcliffe, M., Heir, V., Mitra, A., Smith, H., Muinonen-Martin, A.J.

Background: Mole-mapping is an effective way to facilitate the early detection of melanoma in high-risk patients with multiple and/or atypical naevi. Our aim was to evaluate the use of a mole-mapping device in the pigmented lesion clinic and compare this to standard medical photography.

Methods: We carried out a pilot comparing our current software Medical Image Manager (MIM), to the Canfield IntelliStudio Gen3 with DermaGraphix®. The IntelliStudio combines a semi-automated photo-acquisition system with mole-tracking software allowing linked comparison of macro- and dermatoscopic images. Software flags new or changed lesions, and AI known as DEXI (Dermatology Explained Intelligence) risk stratifies lesions as low- or high-risk for malignancy. The technology was assessed on its efficiency of use, ability to identify new or changed naevi, and the accuracy of DEXI.

Results: 12 patients with multiple and/or atypical naevi were recruited, 7 had multiple visits and 8 had images captured using both systems. On average DermaGraphix® was 5.4 times faster ($p=0.0307$) and needed 54% fewer clicks-per-lesion ($p=0.0185$) vs. MIM to assess all marked naevi. The software flagged new and changed lesions and the toggle function allowed these to be rapidly identified as either benign inflammatory lesions or false positives, mainly attributable to variable body positioning and artefact e.g. clothing. DEXI identified 13 lesions as high-risk for melanoma, 5 of which scored as low-risk on another visit. These lesions were reviewed by dermatologists; all were stable and benign.

Conclusions/Implications for Practice: In conclusion, the IntelliStudio was considered a time-efficient and user-friendly system. Specialists could rapidly compare sequential images using the toggle function and dermatoscopic images were linked to body maps. Although this pilot suggests that DeXI is not yet clinically reliable, a newer version is now available. We conclude that the IntelliStudio is a superior mole-mapping system compared to MIM for monitoring high-risk patients in a tertiary pigmented lesion clinic.

Title: Creating an environment for development, prioritisation and evaluation of artificial intelligence products in clinical radiology – ‘The Leeds Way’

Authors: James Henry Robert Cairns, Riley, B., Ismail, H., Al-Qaisieh, B., Siddique, M., Herbert, C., Wheller, B., Chowdhury, F., Scarsbrook A.

Background: Artificial intelligence (AI) has the potential to revolutionise clinical workflow, reduce risk and improve diagnosis in radiology, however, requires organisational change. Our approach at Leeds Teaching Hospitals NHS Trust (LTHT) to create an ecosystem for imaging AI tool development, prioritisation, evaluation and patient acceptability is described.

Methods: A multi-professional clinical AI board and linked patient and public involvement group were formed. A structured framework was devised, encompassing key work packages including information governance/data management; technical rigour, safety and performance; economic and commercial considerations; ethical, medico-legal and privacy considerations. Alongside regular meetings, a workshop to identify priority clinical use cases was attended by clinicians, information technology (IT) specialists and patient representatives. Additionally, technical infrastructure was expanded to facilitate development, deployment and performance evaluation of imaging AI tools.

Results: Key areas of focus for AI use cases included: staff training, vetting requests, quality assurance, image interpretation and patient communication of imaging reports. For each area benefits, potential barriers around delivery/acceptance, evidence gaps and next steps for implementation of AI tools were identified. Collaboration opportunities with relevant businesses and available off-the-shelf products were highlighted. To support benchmarking of AI tool performance, a virtual PACS environment was expanded and linked to a deployment engine. This innovative approach facilitated comprehensive performance evaluation of commercially available AI products, while minimising clinical workflow disruption.

Conclusions/Implications for Practice: Establishment of an institutional AI board and creation of a virtual PACS environment has guided safe and effective AI implementation in radiology at LTHT. This has created an ideal setting for driving innovation and academic output while producing collaborative industry partnerships. Whilst development and deployment of AI products has strong clinical support, allocation of IT resources can limit progress. The AI board has allowed clinicians to collaborate and produce efficient solutions to streamline allocation of limited resources.

FINALIST

Title: Widening access to renal research at Leeds – sharing initiatives and future plans

Authors: Mei Ling To, Cynthia Imoedemhe, Daga, S., Lewington, A., Ajayi, D., Dorey, S., Mitchell, S., Nzekwe, C., Wheatley, R.

Background: Over 7 million people have Chronic Kidney Diseases (CKD) in the United Kingdom, with several social determinants of poor outcomes for example ethnic minorities are 5 times more likely to develop CKD. Addressing these health inequalities is one of the core areas of LTHT and University of Leeds, thus requires active measures to bridge the gap. LTHT Renal Research team aims to address the health inequalities and develop targeted strategies to improve access to research. Currently, ethnic minorities make up 14% of our studies, and our ambitious target is to increase this by mirroring proportion we care for in the clinic, at least 20%, with further increases in the future.

Methods: We are having monthly meetings to reflect on current research participations and launched number of initiatives. We are studying our data to establish current access to research as part of service evaluation process.

Results: Preliminary results from the service evaluation revealed that since 2011, 83.1% of 2299 patients approached to participate in research were White, 4.2% were Black, 9.4% were Asian, 1.6% Other, and 1.7% Not Known. Of 1498 patients who consented to research, 85.5% were White, 3.8% Black, 7% Asian, 0.9% Other, and 2.8% Not Known. We released the first Renal Research Newsletter (January 2024) to raise awareness of research activities in the wider team. - We established a staff register capturing their interest in research with a QR code embedded flyer (3 Sub-I recruited). We are creating a "Research Ready Database" for interested patients. Building on previous community engagements, we plan to do annual patients/public events. Invested in iPad with language line to increase access to non-English speaking patients (11 recruited as a result)

Conclusions/Implications for Practice: We believe because of above initiatives; we will achieve research inclusivity at Leeds. We will share additional impact data at the conference.

Title: Introduction and Assessment of an Updated Multi-Modality Induction Program for Rotating Junior Staff in a Regional Plastic Surgery Centre

Authors: HALA ABDEL-RAHMAN BEDRI, De La Cruz, M., Leonard, D.

Background: Aim of project: To assess the confidence of junior Plastic Surgery doctors' (FY/CT level) in core competencies and optimise our departmental induction program.

Methods: Quality Improvement project at the Plastic Surgery Department of Leeds General Infirmary (May-September 2023). Doctors at FY/CT grade in post for a period of 8 weeks were invited to complete an online survey of their confidence with common Plastic Surgery competencies (Cohort A). Analysis of these data guided revision of the departmental induction program including updated didactic and practical sessions, and production of an e-handbook (Figure 1). Follow up surveys were completed by a subsequent cohort (B) at 3 points: prior and immediately after induction, and 8 weeks post start.

Results: Cohort A and B were comparable in size (5 vs 4) and composition (FY/CT/Trust Grade). Cohort A were 25% "Not confident", 26% "Somewhat confident", 38% "Confident" and 11% "Very confident" in core competencies at 8 weeks post start of placement. While cohort B were 11%, 13%, 29% and 47% respectively ($p < 0.00001$) 8 weeks following revised induction. A detailed comparison is displayed in Figure 2. Cohort B also demonstrated a progressive increase in confidence from immediately post-induction to 8 weeks, citing access to the electronic handbook as a significant factor. They had an overall increase in confidence ("Confident"/"Very confident" responses) from 25% to 38% and a reduction of "Not confident" responses from 53% to 30% ($p = 0.0023$) immediately after the induction

Conclusions/Implications for Practice: Our findings highlight the importance of appropriate educational guidance tools for the most junior members of the team to facilitate their learning experience, role confidence and therefore improve patient care.

Title: Improving peri-operative medicines administration for inpatients awaiting surgery

Authors: Priya Shankar, Powley, L., Colhoun, A., Botham, S.

Background: SJUH has 283 surgical beds across 17 wards, offering both elective and non-elective surgery. Patients requiring admission for non-elective surgery have their regular medicines prescribed, however the perception was that these are often omitted by the nursing staff as the patients are NBM. This can lead to problems in the peri-operative period, especially if patients have a prolonged wait for surgery.

Methods: Drug charts from 50 inpatients were reviewed and data gathered regarding omissions and reasons why. Survey data investigating the cause was collected from staff, including occupation, grade, confidence level and a knowledge test of 14 classes of drugs and whether they should be withheld prior to surgery.

Results: 64% had medication given or withheld inappropriately. All staff made errors on the knowledge test, and confidence level did not correlate with number of errors made.

Conclusions/Implications for Practice: A poster was created in consultation with pharmacy, the anaesthetic consultant body and the medicines safety committee. Over 100 posters were

displayed on every drug cart in every surgical ward, every clinic room and every doctor's office. The poster was advertised and explained in a series of 5 minute mini educational visits. It was presented in the Foundation Doctors weekly teaching and a handout distributed. Interventions and further teaching targeted all staff groups and the poster designed to have clear give/don't give instructions. A second review of 60 drug charts from patients having acute surgery showed 88% had medications given appropriately, an increase from 36%. Mean errors decreased from 3.5 to 0.75 per staff member, with all staff showing a decrease in error rate. 90% of respondents felt the poster was useful, the remaining 10% were not yet aware of the poster. We think this demonstrates how a simple, highly visible intervention when backed up with education, can have a significant impact enhancing safe patient care.

FINALIST

Title: Talniflumate as a therapeutic strategy in breast cancer

Authors: Ritika Rampal, Pramanik, A., Mcloughlin, L., Aiyappa-Maudsley, R., Kim, B., Hughes, T.

Background: Although survival of breast cancer is improving across most breast cancer types, triple negative breast cancer (TNBC) survival remains poor, partly, due to chemoresistance. Lower expression of Mucin 17 (a glycoprotein) has been shown to correlate with improved patient survival in TNBC patients, and in vitro reduction of MUC17 expression can sensitise breast cancer cells to chemotherapy. Therefore, inhibition of MUC17 function may improve responses to chemotherapy in patients; however, there are currently no selective MUC17 inhibitors. Talniflumate is a mucin regulator and is an orally available anti-inflammatory drug. We have assessed whether talniflumate can chemosensitise breast cancer cells in vitro.

Methods: In this lab based research project we used 2 cell lines representing different breast cancer subtypes: triple negative, MDA-MB-468 and ER+ HER2-, MCF7. Short and long term cell survival assays were used to assess the influence of the chemotherapy agent epirubicin, or talniflumate either alone or in combination.

Results: As expected, epirubicin caused dose- and time-dependent reduction of survival in both breast cancer cell lines. Talniflumate alone also showed similar results causing approximately 30% less cell survival in MCF7 cells at 50µM and 70µM doses. Furthermore, in MDA-MB-468 (TNBC) cell line, there was approximately 20% less cell survival at 20µM and 25µM doses. Talniflumate's cytotoxic effect was additive with epirubicin when used in combination.

Similar results were seen in longer term colony forming assays which showed a combination of talniflumate and epirubicin lead to an additional killing of cancer cells by at least 15% at 250nM and by at least 14% at 500nM when compared with epirubicin alone in TNBC cells.

Conclusions/Implications for Practice: Talniflumate caused cytotoxicity in breast cancer cell lines in both short and long term survival assays. We conclude that talniflumate merits more detailed examination as a potential breast cancer therapeutic.

Title: Audit to assess compliance with LDI paediatric department "Was not Brought" policy

Authors: Zoe Shrivastva, Susan Kindelan.

Background: Missed appointments may be an alerting feature that a child or young person (CYP) is being neglected. Non-engagement with health services and poor information sharing are frequently cited in Serious Case Reviews, when children are seriously harmed or die as a result of maltreatment. An audit in 2021 showed, of CYP who were "outcomed" for 14-day letter, only 73% had 14-day letter sent and only 22% of those were followed up. Lack of clarity of process and roles of different team members meant inconsistency and patients lost to follow up. This led to adoption of a new WNB policy in August 2022, including a waiting list to keep track of CYP who need following up. Aims: 1) To assess whether CYP who are not brought to appointments are discharged appropriately, in compliance with "Was not brought" policy. 2) To assess whether

""14-day contact"" (WNB2) letters are sent when indicated, and families sent WNB2 letters are followed up appropriately.

Methods: CYP who were not brought to appointments over a 2 month period (03/01/2023 to 28/02/2023) were identified. Using electronic patient records and "Was not Brought" waiting list, data were added to an excel spreadsheet.

Results: 93% of CYP not brought had a documented reason for discharge. 83% had the appropriate letter sent. 92% of letters were copied to appropriate professionals, including GMP. 100% of 14-day letters were sent, when indicated, within 3 weeks, and the CYP were followed up appropriately. The standard for each of the above was set at 100%"

Conclusions/Implications for Practice: Implementation of WNB policy resulted in high proportion of patients being appropriately discharged, with the relevant professionals being informed (98% of WNB letters were copied to the GP, who is often central to the CYP's care.) 100% of CYP, compared to 22% in 2020, were followed up after being sent a 14-day letter.

Title: "Empty Plates Not Empty Stomachs" - a Quality Improvement project to improve patient experience of meal service on an older adult ward.

Authors: Katy Mallender-Ward, Catterill, C., Barraclough, J., Hawksworth, T., Legg, D., Kotwal, J.

Background: Adequate nutrition of patients on hospital wards is important to reduce the chances of deterioration (Orell et al, 2023). The opportunity for improvement came from the ward-level staff delivering the process, with the overall objective to create an environment that would contribute to an increase in the food 'nutritional' consumption of patients.

Methods: A two-day *Kaizen event facilitated by Improvement Specialists in the Kaizen Promotion Office, led a multidisciplinary team including ward nurses, clinical support workers, facilities housekeepers, facilities managers, dieticians, and a patient volunteer partner to develop initial steps towards an improved lunch time service. Using Leeds Improvement Methodology changes to the process saw the relaunch of a pre-meal service huddle for all ward staff, use of a bell to signal the start and finish of the service and a new sequence of delivering food to the patient's bedside. *Japanese for "continuous improvement"

Results: Significant improvement was seen in all baseline data within the first 30 days. Number of wasted plates saw a 3.5% improvement overall. The number of handwipes utilised saw a 100% improvement rate. In addition, a 75% improvement rate was observed in number of side tables ready for meals to be placed, along with a 43% improvement in the patient's getting food ordered. Staff morale specifically in readiness for meal service improved by 40% and lead time for trays going out and time patients waiting soup once prepared saw a 55-minute reduction in waste.

Conclusions/Implications for Practice: By using a Leeds Improvement Method approach, rapid and sustained improvement has been made to the patient's experience and staff morale, with unexpected improvements linked to hygiene and health care associated infections.

Reference:

Orell, H., Pohju, A., Tuokkola, J., Junttila, K., Heikkilä, A., Österlund, P., Schwab, U., & Mäkitie, A. (2023). Time to act! - a cross-sectional study on how nutritional risk increases during hospitalization and associates with worse outcome. *Clinical Nutrition ESPEN*, 57, 364–374. <https://doi.org/10.1016/j.clnesp.2023.07.016>

Title: Innovative Day Case Spinal Surgery Pathways with Remote Monitoring Virtual Ward care

Authors: Rohitashwa Sinha, D'Angelo, A., Cohen, K., Derham, C., Mcmillan, K., Mcmillan, T., Pal, D., Smedley, A., Uttley, A.

Background: Daycase surgery can help patients with functional recovery, reduce risks of hospital acquired infection and save resources by reducing length of stay. This is especially important with the increasing backlog of patients awaiting spinal surgery. We propose new pathways that

innovatively use resources and infrastructure at LTHT to deliver Daycase Spinal surgery with Remote monitoring Virtual Ward follow up.

Methods: A 3 stream care pathway has been designed. (1) Select and prepare the most suitable patients in clinic. (2) Implement lean day of surgery workflows. (3) Provide post-operative monitoring for patients at home using devices recording observations and telemedicine checks with the virtual ward team from daycase discharge. PLICs data analysis in R with negative binomial modelling was used to justify the case for the new pathways.

Results: 984 patients had lumbar disc removal and lumbar spine decompression operations in the PLICS dataset since 2018 at LTHT. Median length of stay (LOS) was 2 days, interquartile range 2. LOS strongly negatively correlated with Margin (£) and strongly positively correlated with Complexity/Comorbidity scores ($z = -12.4$, $p < 0.001$ and $z = 11$, $p < 0.001$). With Complexity/Comorbidity scores > 4 and LOS > 4 , episode margins turned from positive to losses. Pilot pathway results from March 2024 will also be presented.

Conclusions/Implications for Practice: Our results mirror results in Urology and joint replacement daycase studies. Selection of less co-morbid (Charlson index < 3) patients for technologically enhanced remote monitoring daycase spinal surgery, should reduce LOS and prevent financial losses to save resources for the surgical backlog. Data driven culture changes with innovative solutions like virtual ward follow up may be the future standard of care for daycase spinal surgery.

Title: The role of periodontal disease in rheumatoid arthritis: Collaborative Work across Dentistry and Rheumatology at NIHR Leeds Clinical Research Facilities/Biomedical Research Centre.

Authors: Ashna Chavda, Mustufvi, Z., Navarro-Coy, N., Letton, R., Nielsen, A., Dukanovic, G., Tugnait, A., Emery, P., Mankia, K., Pavitt, S.

Background: Patients at-risk of rheumatoid arthritis (ARRA) have an increased prevalence of periodontal disease (PD) due to the oral-systemic connection. The RA-Periodontal Proof of Concept study (RAP-PoC) is an interdisciplinary collaboration across Dentistry and Rheumatology at NIHR-Leeds Clinical Research Facility/Biomedical Research Centre (LCRF/BRC) investigating PD treatment in at-risk RA patients to prevent or delay the onset of RA.

Methods: Two LCRF hubs (rheumatology at Chapel Allerton Hospital and dentistry at the Dental Translational and Clinical Research Unit [DenTCRU]/Leeds Dental Institute [LDI]) are delivering the novel RAP-PoC 'RA-Periodontal Pathway'. Patients at-risk of RA are recruited from the rheumatology clinics and assessed for PD by DenTCRU. Those with PD receive nonsurgical periodontal therapy (NSPT) at the LDI as per NHS protocol. Periodontal indices are recorded and blood, plaque, saliva, and gingival crevicular fluid samples are collected before and after NSPT. Treatment is considered complete when PD stabilises, or after two rounds of treatment.

Results: Preliminary results indicate that out of 111 at-risk patients identified and approached, 43 declined, 68 were eligible and underwent periodontal assessment, with 42 (61.8%) diagnosed with clinically significant PD and referred to receive NSPT. Of those, 26 participants have completed the treatment pathway, while 11 have been lost to follow-up. The remaining participants are still undergoing treatment.

Conclusions/Implications for Practice: The LCRF/BRC has been instrumental in facilitating the collaboration between dentistry and rheumatology in the RAP-PoC study. Additional data and sample collection are required to assess patient acceptability of the RA-Periodontal pathway and determine its potential implementation in the NHS as a preventative measure for individuals at-risk of RA.

Title: An overview of skeletal muscle health: what we know to date and potential next steps

Authors: Dr Isobel Jacob

Background: Research background. The investigation of age-related differences in skeletal muscle health across the adult lifespan and the importance of physical activity in mediating age-related differences.

Methods: Research to date. Age-related differences in muscle health are noticeable from 50 years of age, however, physical activity can mediate these age-related differences and is therefore important for preventing and treating sarcopenia. Sarcopenia is a condition associated with comorbidities such as increased risk of falls and hospitalisation. Additionally, there is an increased risk of probable sarcopenia in those with long term conditions and multimorbidity. Physical function impairment is a crucial element in the diagnosis of sarcopenia and frailty, both of which can lead to poor quality of life, reduce functional ability and a loss of independence. Due to the clinical utility of ultrasound, it is recommended that ultrasound is used to identify those at risk of, or with muscle sarcopenia.

Results: Potential next steps in Leeds. The prevalence of sarcopenia in adults with long term conditions and multimorbidity in Leeds is unknown. Determining such prevalence will help to develop interventions to prevent and/or treat sarcopenia for specific populations. Clinicians' understanding and diagnosis of sarcopenia in the Leeds area is currently unknown. This could highlight the potential need for additional training within the healthcare sector in order to identify individuals at risk of, or with sarcopenia in Leeds. Furthermore, insights into clinicians use of ultrasound in the hospital and/or community as part of the diagnosis of muscle sarcopenia may help in the development of further research studies to evaluate the implementation of ultrasound as part of the diagnosis of sarcopenia in the Leeds area.

Finally, developing interventions to prevent/treat frailty and sarcopenia collectively may provide a more cost effective approach to improving outcomes for individuals at risk of frailty and sarcopenia.

Conclusions/Implications for Practice:

n/a

Title: Optimising nutrition replacement for unwell parenteral nutrition patients in hospital

Authors: Jin Wei Choy, Emma Abel.

Background: When home parenteral nutrition (PN) patients are admitted to hospital, it disrupts their routine resulting in missed PN doses and a vital or sole source of nutrition. The amount of PN received is hugely variable and unique to individuals, with some on daily PN and others supplementary PN. There is considerable variation in how this replacement occurs and whether formal training is provided in our trust to junior doctors who manage these patients. In this project we aim to increase provider confidence and consistency of PN replacement for such patients to improve patient safety.

Methods: We assessed doctor's confidence in managing and replacing PN for these patients and provided multiple resources to educate and assist them when prescribing replacement PN. This included teaching sessions and creating best practice guidelines through expert consensus from Gastroenterology consultants and advanced clinical pharmacists. This was followed by repeat evaluation of their confidence in between the implemented interventions to determine which resource was most effective.

Results: Baseline data was initially collected from 11 junior doctors working in Gastroenterology. They reported a mean score of 2.6 (out of 5) for confidence in prescribing replacement PN. 54.5% of them reported being unaware of any guidelines or prescribing aids and 81.8% not having formal training on this topic. Doctors found the best practice guideline the most helpful resource (72.7%) and reported a mean score of 3.8 (out of 5) for confidence after reviewing the resources.

Conclusions/Implications for Practice: With little training provided in the trust for doctor's starting on the Gastroenterology rotation, the best practice PN guideline is critical to providing

the best care for PN patients. It will be included in the induction materials for rotating doctors and a larger validity study should be repeated after the implementation of these guidelines for further improvement of the process for safe PN prescribing.

Title: Radiographer Led Discharge - Enhancing Patient Care

Authors: Amy Richards, Appleyard, D.

Background: Introduction: Typically, more than 25 patients per day are referred for X-Ray from the Minor Injuries Unit (MIU). Around 60% of these have no bony injury (NBI) and could be discharged. Radiographer-led discharge (RLD) by appropriately trained radiographers is a role extension that facilitates discharge directly from the imaging department 1. RLD reduces total time in department, x-ray to discharge time, improves patient satisfaction, and improves MIU adherence to Emergency Care Standard (ECS) target of 100% <4 hours. Twenty-one Reporting Radiographers (RRPs) are post-graduate trained in Image Interpretation. RRP's skills were underutilised, contributing to avoidable patient journey time delay. A Radiographer Led Discharge (RLD) scheme was proposed.

Methods: Methods: RRP's worked closely with Emergency Department (ED) and Emergency Nurse Practitioner (ENP) colleagues to design a robust RLD pathway. RLD pathway inclusion: Any adult patient with a closed musculoskeletal (MSK) injury from shoulder to fingers, knee to toes. RLD pathway requires full clinical assessment by ENP prior to X-ray referral with comprehensive 'Plan A, Plan B' style management plan documented on electronic patient record (PPM+). Following x-ray, patients are reviewed by RRP and if NBI can be discharged by RRP with advice; all patient interactions and x-ray findings are documented in patient record on PPM+.

Results: Results: Utilising Radiographer Led Discharge: • Average X-Ray to discharge time reduced from 1hr 43 minutes to 19 minutes. • Radiographer Led Discharge = 100% compliance with ECS four-hour target. • Between April and August 2023 up to 67% of MIU patients used the RLD pathway.

Conclusions/Implications for Practice: Conclusions: Patients are extremely satisfied; their feedback is positive: "This is the fastest I've ever been seen." "The new system...was excellent... very quick but thorough". Staff are empowered by the process as it respects professional boundaries, utilising each profession to maximum patient benefit. The cost effectiveness of RLD offers potential for other workforce developments.

References

1. Howard M. Radiographer-led discharge: What are we waiting for? *Imaging and Oncology*. 2017. 34-38.

Title: A 5-year Retrospective Audit Measuring the Surgical Outcome Success Rates of Open and Closed Exposures of Impacted Canines at a District General Hospital

Authors: Taiba Jamshaid, McHenry, I.

Background: The aim of this audit is to compare success outcomes for current practice for surgical canine exposure at Mid Yorkshire Hospitals Trust to an accepted gold standard of 95.5% to identify compliance with RCS ectopic canines management guidelines (Lwin et al., 2023; Cooney et al., 2019; RCS, 2023). Success is measured by absence of prolonged post-operative complications including pain, bleeding, infection, failed gold chain, no gingival overgrowth.

Methods: Patient attending Mid Yorkshire Hospital for the surgical permanent canine exposure from November 2018 to October 2023 were recorded. MS Excel package was used for data analysis.

Results: 70.1% of surgical exposures of teeth were canine exposures. 19 patients had bilateral incidence (19.8%). 74 open canine exposures were undertaken (64.3%) and 41 closed exposures (35.7%). 7 surgical canine exposures resulted in complications (6.1%). The success rate at Mid Yorks for surgical canine exposure in 2018-2023 is 93.9%.

Conclusions/Implications for Practice: The results of the audit show that there is scope for improvement when observing the surgical success rate compared to the gold standard (94.6% & 92.7% < 95.5%). The complications that have arose tend to show a variation between patient factors (post-operative infection/pain) and clinical factors (failure of the gold chain). The compliance to the gold standard for surgical canine exposure at Mid Yorks is not fully met 93.9% < 95.5%. 57.1% were associated with post-operative infection and bleeding (57.1%). Patients did not have access to written post-operative information and literature has shown that this can improve compliance (Jiang et al., 2021). A pre-operative mouth rinse has been sure to have higher success rates compared to saline rinse (Cho et al., 2017).

Title: A re-audit to assess the Incidence of Alveolar Osteitis at a Yorkshire Dental Practice

Authors: Taiba Jamshaid

Background: Aim: To conduct a re-audit at Yorkshire Dental Suite to assess the incidence of alveolar osteitis following extractions in 2021 for comparison against the first audit cycle conducted in 2017 and assess if implementation of recommendations made in the first cycle changed occurrence rates.

Objectives: The suggestions for improvement made within the first cycle have been implemented and a re-audit undertaken following a 4-year period has been conducted to assess the efficacy of these strategies and a change in occurrence rates.

Methods: The first audit cycle investigated incidence rates in 1 month whilst the re-audit cycle rates in 9 months. This data collected included diagnosis and treatment history for extractions and dry sockets.

Results: The re-audit cycle at Yorkshire Dental Suite observed 9.3% occurrence rate of alveolar osteitis following extraction over 9 months. Following implementation of recommendations made in the first cycle, a 0.4% reduction in the incidence of non-wisdom teeth extractions and 5.3% decrease in lower wisdom teeth extractions was observed.

Conclusions/Implications for Practice: To summarise the findings of this paper, re-audit cycle demonstrated a positive correlation between the implementation of techniques: 1. post-extraction oral hygiene advice and 2. A pre-operative Corsodyl rinse; and the decrease in alveolar osteitis following extraction.

Title: The use of healthcare technologies by children with musculoskeletal conditions.

Authors: Heather Rostron, Wright, J., Gilbert, A., Dillion, B., Pini, S., Redmond, A.

Background: During the Covid-19 pandemic, more patients than ever before were cared for away from the hospital to stop the spread of infection. Children with musculoskeletal conditions regularly attend hospitals and struggled whilst at home. Using healthcare technologies may be useful in supporting them during future pandemics or for their normal care. In the scientific literature there are studies reporting on healthcare technologies used by children with musculoskeletal conditions. The aim of this project was to bring together the results of all these studies to provide a complete understanding of what is known about healthcare technology use in this population.

Methods: All types of studies were included in this project and information written on websites. Various healthcare databases were searched to help in finding the correct studies. Once relevant studies were found, key information was saved from them eg. age, type of healthcare technology. Studies reporting large amounts of data were pulled together, and studies reporting on experiences or opinions were pulled together separately. All studies were checked for quality using specific research tools. Afterwards, all results were written up as an overall report.

Results: Some studies were reported twice, so after identical studies were removed, 4461 study titles and overviews were checked for inclusion, 324 full text studies were checked in detail, and 53 studies included. Studies about experiences or opinions were rare, and it was difficult to bring

together studies reporting lots of data, because healthcare technologies were very different to each other. Themes were healthcare technologies for self-management, moving to adult care, and assessing pain.

Conclusions/Implications for Practice: This project has provided a complete understanding of what and how technologies are being used by children with musculoskeletal problems. The results will help healthcare staff to support their patients in using healthcare technologies whilst cared for at home.

Title: The Acceleration of DMD Research at Leeds Children's Hospital- Our 5 year Success Story

Authors: Sarah Hanson , Childs, A.M.

Background: Within pockets of the Leeds Children's services, research has been ongoing for over 20 years, however it is only recently that the Duchenne muscular dystrophy (DMD) portfolio has rapidly developed and is now the Children's Hospital's fastest growing area of research. Over the last 5 years the specialist portfolio has expanded from just one research study to over 20 and there are more on the horizon.

Methods: By structuring and developing the workforce to enhance the service and exceed our previous capabilities in research delivery, we have allocated funding for the advancing role of Clinical Research Fellows, crucial to the development of the service. In addition, we have secured a Neuromuscular Well-Being Practitioner to offer psychological support for the patients receiving clinical trials. This is invaluable with the child/young person at the centre of what we do. No other centre has this dedicated post, a fantastic example of us leading the way.

Results: National DMD Hub involvement has enabled us to network, increase access to trials and enabled both our site and staff to be recognised for excellence in practice. We have recruited to target to our whole portfolio and on numerous studies we have over recruited. By accepting out of area referrals via the DMD hub we have increased our population and treated patients nationally. We have been the only site in the UK to open and recruit to two specific DMD trials.

Conclusions/Implications for Practice: The recently awarded prestigious Centre of Excellence award from leading national charity Muscular Dystrophy UK reflects the service we strive to sustain and continually develop. The research portfolio is constantly growing and consisting of early phase and complex treatments. We are being recognised both nationally and internationally that historically were not available to our patients.

Title: Evaluation of the care pathway for patients with suspected NvAMD referred from primary care

Authors: Georgina Mack Garcia, Mckibbin, M., Mohla, A.

Background: Following changes to the local secondary care pathway, this study investigated the true positive rate for suspected NvAMD referrals and times to start treatment and complete the initial 3 injections. Identifiable reasons for any delays were recorded.

Methods: All patients starting treatment for NvAMD in at least one eye between April and September 2023 were included. Data was collected retrospectively from mediSIGHT, Trust electronic records and the dedicated email Inbox for suspected NvAMD referrals from primary care. The true positive referral rate was estimated and the intervals between referral, start of treatment and the 3rd dose of intra-vitreous therapy were recorded. Identifiable delays were grouped into patient and hospital categories.

Results: During the 6-month period, treatment for NvAMD was initiated in 95 eyes. The true positive referral rate was 22%. Treatment was started within 14 and 28 days of referral in 50% and 83% of eyes respectively. The first 3 intra-vitreous injections were given within 10 and 12 weeks in 91% and 100% of eyes. The ability to meet both targets varied from month to month. For the 49 eyes for which treatment was not started within 14 days of referral, patient and hospital factors were the cause in 24% and 76% of eyes respectively.

Conclusions/Implications for Practice: Changes to the local care pathway have improved the delivery of the loading phase of treatment, compared to prior performance documented in the UK AMD Audit. Hospital factors, especially lack of capacity, mean that some patients still experience delays with initial assessment and treatment. Prospective review of clinic capacity and more effective triage of primary care referrals are required to improve access to initial treatment.

Title: Artificial intelligence for lung ultrasound

Authors: Lewis Howell, Ingram, N., Lapham, R., Morrell, A., McLaughlan, J. R.

Background: Monitoring lung health is crucial to manage conditions such as COVID-19 and pneumonia. Currently this is done mostly using X-ray or computer tomography (CT) imaging, but lung ultrasound (LUS) could be a useful alternative. Unlike X-ray or CT scans, ultrasound does not use harmful radiation and can be done nearly anywhere. However, LUS images are difficult for doctors to read and understanding them takes experience. This is because, unlike X-rays, ultrasound cannot pass through the air in your lungs, so it is impossible to image them directly. Instead, doctors look at the way the ultrasound bounces off them, which shows up on LUS images as horizontal reflections, called 'A-lines', and blurry spotlight-like projections, called 'B-lines'.

Methods: We built an artificial intelligence (AI) system which can detect A-lines, B-lines, and other features in LUS images of a realistic lung model. The AI can draw around these features, allowing doctors to interpret ultrasound images easier and faster. We can also use AI to measure the amount of B-lines in the lung, creating a new metric called the B-Line Artefact Score (BLAS), which may be linked to disease severity.

Results: Our AI system is accurate, with 74% similarity between LUS images labelled by the AI and by doctors. It is also fast enough to work on live video from ultrasound machines, potentially helping the doctor assess the patient at the bedside.

Conclusions/Implications for Practice: Adding AI to ultrasound machines could help train new doctors in LUS interpretation. It could also allow doctors to more easily recognise signs of lung diseases and monitor lung health automatically over time. This would mean LUS could be made available to more patients, offering a fast, safe, and effective option for monitoring lung health. This is especially useful in low-income countries and rural areas, where ultrasound is more cost-effective than CT.